US ERA ARCHIVE DOCUMENT

Vapor Intrusion Interim Measures Quarterly Report No. 5

Chamberlain Manufacturing Corporation

Former Facility at 550 Esther Street Waterloo Iowa EPA Docket Nos. RCRA-07-2010-0005

October 29, 2012 Terracon Project No. 07107020

Prepared for:

Chamberlain Manufacturing Corporation Elmhurst, Illinois

Prepared by:

Terracon Consultants, Inc. Omaha, Nebraska

Offices Nationwide Employee-Owned Established in 1965 terracon.com





October 29, 2012

United States Environmental Protection Agency Region 7 - Air and Waste Management Division 11201 Renner Blvd Lenexa, Kansas 66219

Attn: Mr. Bruce Morrison

Re:

Vapor Intrusion Interim Measures Quarterly Report No. 5

Chamberlain Manufacturing Corporation Former Facility at 550 Esther Street

Waterloo, Iowa

EPA Docket Nos. RCRA-07-2010-002 and CERCLA-07-2010-0005

Dear Mr. Morrison:

Terracon Consultants, Inc. (Terracon) is pleased to submit this Vapor Intrusion Interim Measures (VIIM) Quarterly Report for activities completed between July 1, 2012 and September 30, 2012 in conjunction with the site referenced above. The VIIM Quarterly Report presents a summary of activities related to the installation, operation, and monitoring of vapor mitigation systems in residential structures as requested by the EPA. This report also summarizes the analytical results of an August 2012 indoor air monitoring event.

Should you have any questions or require additional information, please do not hesitate to contact our office.

Sincerely,

EPA ARCHIVE DOCUMENT

Terracon Consultants, Inc.

Michael E. Hagemeister

Senior Principal

David M. Svingen, P.E.

Senior Principal

MEH/JRB/DMS

Distribution: Addressee (1 bound)

Terracon Consultants, Inc.

15080 A Circle

Omaha, Nebraska 68144

P [402] 330 2202

F [402] 330 7606

terracon.com

TABLE OF CONTENTS

			<u>Page</u>
1.0	INTR	RODUCTION	
	1.1	Site Conditions	
	1.2	Previous Assessment Activities	2
	1.3	Project Objectives	3
2.0	SCO	PE OF SERVICES	
	2.1	Mitigation Determination	3
	2.2	Site Access Protocol	
3.0	PRO	CEDURES FOR SYSTEM DESIGN, INSTALLATION AND COMMISSIONING	i 3
4.0		IPLETED SYSTEM INSTALLATIONS	
5.0		IPLETED SYSTEM INSPECTION AND REPAIR	
6.0	INDO	OOR AIR MONITORING RESULTS	5
	6.1	Sampling Activities	5
	6.2	Air Monitoring Results	

APPENDIX A - EXHIBITS

Exhibit 1 – Topographic Vicinity Map

Exhibit 2 – Site Diagram

APPENDIX B - TABLES

Table 1 – Indoor Air Analytical Results – 3rd Quarter 2012

Table 2 - Indoor Air Analytical Results - Residence No. 73

APPENDIX C - ANALYTICAL REPORTS

ACRONYMS & ABBREVIATIONS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
City	City of Waterloo
COC	Chain of Custody
EPA	Environmental Protection Agency
	Chamberlain Manufacturing facility
•	Health and Safety Plan
NELAC	National Environmental Laboratory Accreditation Conference
	Tetrachloroethene (or Perchloroethene)
	Photoionization Detector
	parts per million
• •	Quality Assurance
	Quality Assurance Manual
	Quality Assurance Project Plan
	Quality Control
	Resource Conservation and Recovery Act
	Regional Screening Level
	Standard Operating Procedure
	Statement of Work
	Trichloroethene
	TestAmerica, Inc.
TSOP	Terracon Standard Operating Procedure
	Unilateral Administrative Order
	United States Environmental Protection Agency
	Vapor Intrusion Characterization
	Vapor Mitigation System

VAPOR INTRUSION INTERIM MEASURES QUARTERLY REPORT NO. 5 CHAMBERLAIN MANUFACTURING CORPORATION FORMER FACILITY AT 550 ESTHER STREET WATERLOO, IOWA

Terracon Project No. 07107020 October 29, 2012

1.0 INTRODUCTION

Terracon has developed this VIIM Quarterly Report to identify interim remedial measures completed in residential structures in which vapor concentrations related to shallow groundwater contamination from the former Chamberlain Manufacturing Facility (Facility) exceed indoor air screening levels for the period of July 1, 2012 through September 30, 2012. This VIIM Quarterly Report is submitted in accordance with the requirements of the UAO, Docket Nos. RCRA 07-2010-002 and CERCLA 07-2010-005 dated April 20, 2010 and Task IA of the SOW attached to the UAO. Capitalized terms not defined herein have the definitions set for the in the UAO or the SOW.

This VIIM Quarterly Report also provides a summary of indoor analytical results that have been obtained from the residences sampled during the period from July 1, 2012 through September 30, 2012. The residences sampled this period have not required the installation of vapor mitigation based on concentrations observed at these properties.

1.1 Site Conditions

The Facility is an irregularly shaped parcel containing approximately 22.8 acres and located at 550 Esther Street in Waterloo, Iowa. A Topographic Vicinity Map is included as Exhibit 1 in Appendix A. A Site Diagram is included as Exhibit 2.

The Facility manufactured metal washer wringers and projectile metal parts from approximately 1919 until 1996 when it was sold to Atlas Warehouse L.C. for use as a storage facility. The Facility was subsequently abandoned and is currently vacant. The City of Waterloo (City) acquired the Facility from Atlas Warehouse L.C in 2005 in an effort to facilitate redevelopment and has demolished a significant portion of the Facility.

The Facility is zoned Heavy Industrial (M-2) by the City. The Facility is adjoined by park land to the north and south, single family residential housing to the west, and Virden Creek followed by

Vapor Intrusion Interim Measures Quarterly Report No. 5Former Chamberlain Manufacturing Facility Waterloo, Iowa October 29, 2012 Terracon Project No. 07107020



a golf course to the east. Virden Creek is within approximately 100 feet of the Facility at its closest point. Gates Park adjoins the Facility to the north across Louise Street, to the east across Virden Creek, and to the south across the railroad tracks. Single family residences are located across East 4th Street to the west of the Facility. Single family residences are also located along the east side of East 4th between Anita and Louise Streets.

1.2 Previous Assessment Activities

Beginning in 2004, the City conducted an environmental assessment of the site using a USEPA Brownfields Grant. Results of assessment activities identified impacts to soil and groundwater at the site including a chlorinated solvent plume that extends offsite to the south and west. Site assessment activities were not completed due to funding restrictions of the Brownfields Grant program.

Subsequently, environmental assessment activities of onsite soil and groundwater conditions and the offsite chlorinated solvent plume were completed by Chamberlain. The lateral extent of the chlorinated solvent plume has been determined to extend south and west from the Facility into an area of residential development. USEPA's preliminary evaluation of the vapor intrusion to indoor air pathway resulting from the groundwater plume identified the potential for vapor intrusion into residential structures.

To further evaluate the vapor intrusion pathway, the USEPA conducted subslab vapor sampling of selected residences in November 2008. Due to problems with the sampling and analysis equipment, the sampling activities were repeated in April/May 2009. Subslab vapor samples were collected from ten homes located along and near East 4th Street and analyzed for VOCs. In addition, one indoor air sample was collected from one of the ten homes. The results of sampling activities identified PCE and TCE in excess of subslab vapor screening levels. The elevated concentrations were generally located within the 2200, 2300, and 2400 block of East 4th Street.

In accordance with the approved VIC Work Plan, Terracon initially conducted vapor intrusion characterization at 22 residences that responded with completed Sampling Request Forms and Access Agreements from both the property owner and current renter. Initial subslab, indoor air, and ambient air sampling was conducted between April 25, 2011 and May 3, 2011. Additional indoor air samples were collected from four residences on June 16, 2011 and from one residence on September 14, 2011. Based on the analytical results, the reported concentrations of indoor air samples in seven residences were greater than the indoor air screening level. Subslab and indoor air sample results were presented in the VIC Report dated July 5, 2011.

In accordance with the approved VIC Report, Terracon offered vapor sampling to 14 additional residences located on the west side of the 300 block of Boston Avenue and the east side of the 400 block of Boston Avenue. Terracon also reoffered vapor sampling to those residences that



did not respond to previous submittals and contacted residences that requested sampling through the USEPA or that had previously authorized sampling, but could not be reached to schedule an appointment. Supplemental subslab, indoor air, and ambient air sampling was conducted at nine residences between December 12, and December 14, 2011. Analytical results for subslab samples collected from two residences exceeded subslab screening levels and as such, additional indoor air samples were collected at these locations on March 23, 2012. Analytical results for supplemental sampling activities were submitted to the USEPA on April 19, 2012. During the second quarter 2012, indoor air samples were collected at Residences 48 and 73 and were reported in Terracon's July 19, 2012 VIIM Quarterly Report No. 4.

1.3 Project Objectives

The objective of this VIIM Quarterly Report is to present the information required by Section 4.0 of the approved VIIM Work Plan dated October 14, 2010, revised on August 1, 2011, and amended July 19, 2011. This information includes system design "as-builts," information on the expected operational life of the system, a recommendation for the frequency for monitoring and maintaining the system, criteria for determining its effectiveness, a schedule for system replacement in whole or in part (as appropriate), the frequency of system inspection by the Respondent, the results of post-installation system monitoring and any approved deviations from the approved VIIM Work Plan.

2.0 SCOPE OF SERVICES

2.1 Mitigation Determination

During the third quarter 2012, the VMS system inspections were conducted. In addition, indoor air samples were collected from eight residences this period. Based on sampling activities this period, no residences are proposed to have mitigation systems installed or decommissioned.

2.2 Site Access Protocol

Residences were contacted at least 48 hours in advance of system shut-down, sampling, or system inspection to arrange a time and date for proposed activities.

3.0 PROCEDURES FOR SYSTEM DESIGN, INSTALLATION AND COMMISSIONING

Vapor mitigation systems were not designed, installed, commissioned or decommissioned during the 3rd calendar quarter of 2012.



4.0 COMPLETED SYSTEM INSTALLATIONS

Interim mitigation systems were previously offered to, accepted by, and installed at eight Residences. Interim mitigation systems were subsequently shut off at three Residences. System installations were not completed during the 3rd calendar quarter of 2012.

5.0 COMPLETED SYSTEM INSPECTION AND REPAIR

In accordance with the approved VIIM Work Plan, system inspections are to occur on an annual basis following installation through the period of required operation. The purpose of the site inspection is to check each operating system for general condition using visual observation. The inspection includes checking for: proper operation of the blower, possible cracks or disconnections in visible piping, piping attachments, and checking manometer to confirm system vacuum. Systems at Residences 4, 22, 28, 45, and 46 were scheduled to be operational this period. As such, inspections were targeted at each of these residences in September 2012. A Terracon field professional conducted inspections at Residences 28, 45, and 46 on September 20, 2012. On this date, systems at Residences 45 and 46 were in good repair for the above items and appeared to operating as intended. The system at Residence 28 was not operational and according to the homeowner had been shut down on Sept 15, 2012 at the breaker due to possible blower motor problems.

A Terracon field professional conducted an inspection at Residence 22 on September 26, 2012. On this date, the system at Residence 22 was in good repair for the above items and appeared to operating as intended.

On September 26, 2012, Terracon met with Crystal Heating and Plumbing (mitigation system installation contractor) at Residence 28 to assist with troubleshooting the system and make repairs. The blower motor of the system had failed so a new blower motor was installed. The system was restarted on September 26, 2012 and a system check was conducted. Following repair, the system at Residence 28 was in good repair for the above items and appeared to operating as intended.

The system at Residence 4 was also scheduled to be checked during this period. However, Ms. Mary Anderson (former homeowner) indicated that she had sold the home during our request for access. She indicated that she would locate and then provide the new owner contact information to Terracon. As of the date of this report, this new ownership information has not been provided.



6.0 INDOOR AIR MONITORING RESULTS

6.1 Sampling Activities

Indoor air sampling was conducted at Residences 20, 33, 38, 40, 47, 60, 73, and 76 on August 22 or 24 or September 21, 2012. None of the residences sampled during this period have mitigation systems. Instead, Residences 20, 33, 38, 40, 47, 60 and 76 were sampled as part of the semi-annual sampling program conducted in August 2012. Semi-annual indoor air monitoring was conducted in accordance with the approved VIC Report where sub-slab concentrations exceeded sub-slab screening levels, but indoor air concentrations were below indoor air screening levels. Residence 48 was scheduled to be sampled as part of the semi-annual sampling event but was eliminated this current period with USEPA concurrence at the homeowner's request. With USEPA concurrence, Residence 73 was sampled on September 21, 2012 as a follow-up due to a March 2012 event indoor air threshold exceedence for TCE.

Indoor air samples were collected using laboratory prepared six-liter Summa canisters and flow controllers. The flow controllers were pre-set by the laboratory to collect samples over a 24-hour period. Terracon requested that occupants close doors and windows and operate the heating, ventilating, and air conditioning (HVAC) system for the period beginning 24-hours prior to the start of sample collection to the end of sample collection.

Consistent with VIC activities and in accordance with the USEPA approval letter dated January 6, 2011, indoor air sampling was conducted in the basement and in the lowest occupied living area of each residence. A finished basement is considered to be an occupied living space. Terracon attempted to position sample containers in the same general location used for previous indoor air sampling.

Terracon field personnel connected the flow controller to the Summa canister by removing the brass cap on the canister and tightening the stainless steel Swagelok fitting on the flow controller to the threads on the canister. A wrench was used to firmly tighten the fitting.

Once sample containers were positioned, air sampling forms (project information, equipment identifiers, sample location, and start time) were filled out and attached to the canisters. A Soil Vapor/Indoor Air Sampling Information Form indicating pertinent project and sample collection information was completed for each indoor air sample. A COC was completed indicating the start time for the samples.



To open the canister, the valve was rotated counter-clockwise at least one full turn or otherwise opened. After the 24-hours, Terracon personnel returned to the Residence, closed the valve on the canister and recorded the time and vacuum remaining in the Summa canister on the Terracon sampling forms and on the COC. The canisters and flow controllers were then transported to the laboratory.

Indoor air monitoring activities are summarized in Table 6-1.

Table 6-1 Semi-Annual Indoor Air Monitoring

able 6-1 6cm-Amadi macor All monitoring								
Residence No.	Sample Date	Basement Sample	1 st Floor Sample					
20	8/22/12	X	1					
33	8/22/12	X	X					
38	8/22/12	X	X					
40	8/22/12	X	X					
47	8/22/12	X	X					
60	8/22/12	X	X					
73	9/21/12	X	1					
76	8/24/12	X	1					

¹ – Basement contains a finished family room; therefore, the basement is the lowest occupied level. Per the USEPA letter of January 6, 2011, sampling is not required on the first floor.

6.2 Air Monitoring Results

Indoor air samples were collected using six-liter Summa canisters. The Summa canisters were submitted for analysis of PCE, TCE, vinyl chloride, trans-1,2-dichloroethene (trans-DCE), cis-1,2-dichloroethene (cis-DCE), 1,1-dichloroethene, 1,1-dichloroethane, 1,1,1-trichloroethane (TCA), and 1,1,2- trichloroethane, using EPA Method TO-15.

Laboratory procedures were performed by TestAmerica, Knoxville, Tennessee. TestAmerica is NELAC accredited for the laboratory methods referenced above. The laboratory QAM is on file with the USEPA. A copy of the SOPs for the specified method was included as Appendix F of the VIC Work Plan. The TestAmerica data is reported in accordance with the QAM and SOP. Results of indoor air monitoring activities conducted over this current period are summarized in Table 1, Appendix B. Table 2, Appendix B provides a summary of the analytical results at Residence 73 from the initial sampling event to current. Copies of analytical reports for samples collected over this period are provided in Appendix C.

The analytical results for air samples collected at Residences 20, 33, 38, 40, 47, 60, and 76 had reported concentrations that were below applicable thresholds. Since sub-slab samples at these locations exceeded sub-slab screening levels, semi-annual monitoring will continue in

Vapor Intrusion Interim Measures Quarterly Report No. 5Former Chamberlain Manufacturing Facility Waterloo, Iowa October 29, 2012 Terracon Project No. 07107020



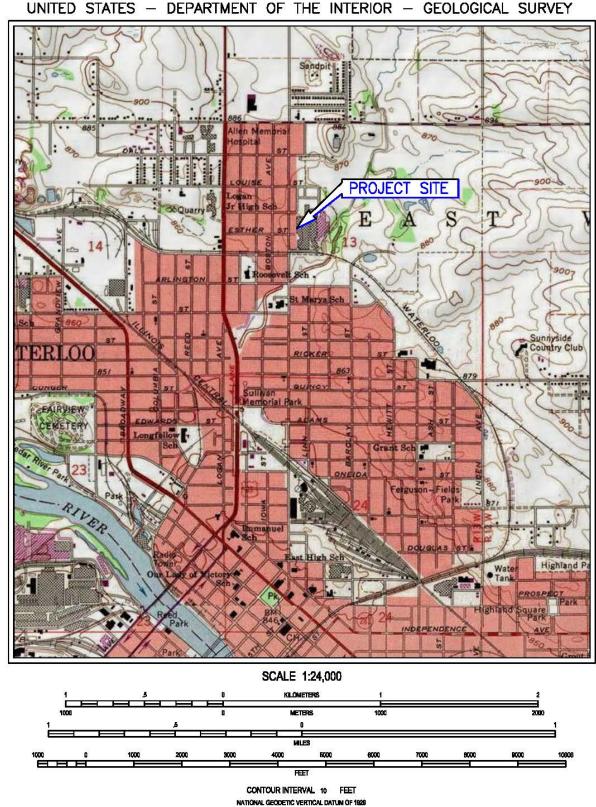
accordance with the approved VIC Report. In addition, Residence 48 will also be sampled during the first quarter 2013 provided that the resident allows access. The next scheduled monitoring event will occur during the first quarter 2013.

With respect to the September 21, 2012 results for Residence No. 73, each analyte was below the applicable indoor air threshold as shown on Table 2, Appendix B. However, TCE was reported at 0.59 ug/m³ in the blind duplicate sample which is above the indoor air threshold of 0.43 ug/m³. Issues with the blind duplicate results were not identified in the data validation process. Though an exceedence was reported in the blind duplicate, Terracon has proposed that Residence No. 73 be resampled in conjunction with the semi-annual monitoring events. This is supported by the fact that the actual sample was below the threshold and the apparent downward trends in the indoor air results that have been observed from March 2012 to the current. The next scheduled monitoring event will occur during the first quarter 2013.



Appendix A – Exhibits

Exhibit 1 – Topographic Vicinity Map Exhibit 2 – Site Diagram



WATERLOO NORTH, IOWA

QUADRANGLÉ 1972 7.5 MINUTE SERIES (TOPOGRAPHIC)

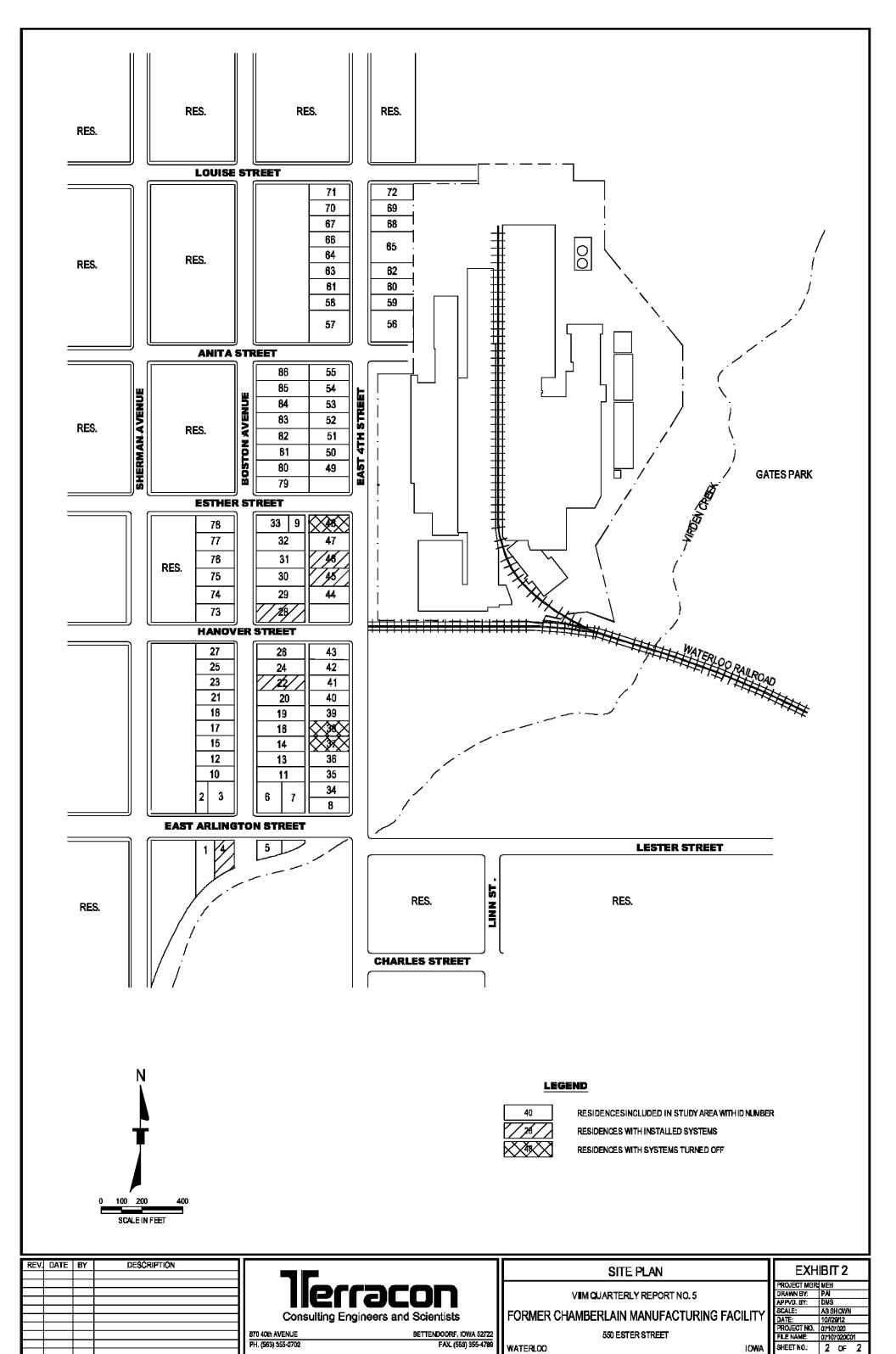
Project Mngr:	MEH	Project No. 07107020
Опинт Ву:	PAI	Scale: AS SHOWN
Checked By:	MEH	File No. 07107020C01
Approved By:	DMS	Date: 10/29/12

P:(2010)07107020\PROJECT DOCUMENTS (Reports

870 40th AVENUE PH. (563) 365-0702 FAX. (583) 365-4789

SITE LOCATION TOPOGRAPHIC MAP VIIM QUARATERLY REPORT NO. 5 FORMER CHAMBERLAIN MANUFACTURING FACILITY 550 ESTER STREET 4706 WATERLOO 98/DWGS\07107020C01.64

EXHIBIT





Appendix B -Tables

Table 1 – Indoor Air Analytical Results – 3rd Quarter 2012 Table 2 – Indoor Air Analytical Results – Residence No. 73

TABLE 1

INDOOR AIR ANALYTICAL RESULTS 3rd Quarter 2012

CHAMBERLAIN MANUFACTURING

VAPOR INTRUSION INTERIM MEASURES QUARTERLY REPORT NO. 5

Analyte	Sample ID Date Units	IA-20-B-5 8/22/2012	IA-1-33-3 8/22/2012	IA-B-33-3 8/22/2012	IA-B-38-3 8/22/2012	IA-1-38-3 8/22/2012	IA-1-40-3 8/22/2012	IA-B-40-3 8/22/2012	IA-B-40-3 (Dup) 8/22/2012	Reporting Limit	Analytical Method Detection Limit	Indoor Air Screening Level ²
Tetrachloroethene	μ g /m³	<0.54	0.37 J	0.54 J	0.34 J	0.15 J	0.51 J	1.4	0.26 J	0.54	0.11	9.4 ³
Trichloroethene	μ g /m³	0.090 J	0.24	0.23	<0.21	<0.21	0.17 J	0.20 J	0.14 J	0.21	0.075	0.43 4
Vinyl chloride	μ g /m³	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.2 1	0.074	0.165
trans-1,2-Dichloroethene	μ g /m³	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	0.32	0.079	63
cis-1,2-Dichloroethene	μg/m³	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	0.32	0.095	63
1,1-Dichloroethene	μg/m³	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	0.32	0.052	210
1,1-Dichloroethane	μg/m³	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	0.32	0.04	1.5
1,1,1-Trichloroethane	μg/m³	1.7	<0.44	<0.44	0.19 J	0.22 J	<0.44	<0.44	<0.44	0.44	0.065	5200
1,1,2-Trichloroethane	μg/m ³	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	0.44 1	0.11	0.15

Analyte	Sample ID Date Units	IA-1-47-2 8/22/2012	IA-B-47-2 8/22/2012	IA-1-60-2 8/22/2012	IA-B-60-2 8/22/2012	IA-B-73-3 9/21/2012	IA-B-73-3 (dup) 9/21/2012	IA-B-76 8/24/2012	Reporting Limit	Analytical Method Detection Limit	Indoor Air Screening Level ²
Tetrachloroethene	μ g /m³	0.12 J	0.11 J	1.3	0.81	<0.54	0.17 J	0.17 J	0.54	0.11	9.4 ³
Trichloroethene	μ g /m ³	0.19 J	0.14 J	0.12 J	0.14 J	0.23	0.59	0.13 J	0.21	0.075	0.43 4
Vinyl chloride	μ g /m³	<0.2	<0.20	<0.2	<0.2	<0.2	<0.2	<0.2	0.2 1	0.074	0.165
trans-1,2-Dichloroethene	μ g /m ³	< 0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	0.32	0.079	63
cis-1,2-Dichloroethene	μ g /m³	< 0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	0.32	0.095	63
1,1-Dichloroethene	μg/m ³	<0.32	<0.32	<0.32	<0.32	0.066 J	<0.32	<0.32	0.32	0.052	210
1,1-Dichloroethane	μ g /m³	< 0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	0.32	0.04	1.5
1,1,1-Trichloroethane	μ g /m³	< 0.44	<0.44	<0.44	<0.44	0.10 J	0.11 J	0.26 J	0.44	0.065	5200
1,1,2-Trichloroethane	μ g /m ³	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	0.44 1	0.11	0.15

NOTES: μg/m3 - micrograms per cubic meter ppm - parts per million

- J The contaminant is present at a concentration greater than the Analytical Method Detection Limit, but less than the Reporting Limit.
- Indoor Air Screening Level is less than Reporting Limit. The USEPA has approved the use of the Reporting Limit as the screening level for this site due to the technical inability to accurately quantify the detection of these compounds at the current USEPA screening level.
- ² Per USEPA approved VIC Work Plan
- ³ Revised Action Threshold for PCE per USEPA e-mail dated February 17, 2012
- ⁴ Revised per USEPA's letter dated October 27, 2011 and as an accommodation to USEPA without waiver of Chamberlain's concerns expressed in its email to USEPA dated November 14, 2011.

SAMPLE ID NOMENCLATURE: First 2 letters identify sample type: SS - Sub-Slab, IA - Indoor Air, AA - Ambient Air, and EB - Equipment Blank The numeric value following the sample type identify the Residence ID Number

TABLE 2

INDOOR AIR ANALYTICAL RESULTS

RESIDENCE NO. 73

VAPOR INTRUSION INTERIM MEASURES QUARTERLY REPORT NO. 5 CHAMBERLAIN MANUFACTURING

		Sub-Slab	Indo	oor Air	Indoor Air	Indo	or Air				
	Sample ID Date		IA-B-73 3/23/2012	IA-B-73 Duplicate 3/23/2012	IA-B-73-2 6/26/2012	IA-B-73-3 9/21/2012	IA-B-73 Duplicate 9/21/2012	Reporting Limit	Analytical mit Method Detection Limit	Sub-Slab Screening Level ²	Indoor Air Screening Level ²
Analyte	Units										
Tetrachloroethene	μ g /m³	2.9	0.26	0.34	0.28	<0.54	0.17 J	0.54	0.11	94 ³	9.4 ³
Trichloroethene	μ g /m³	85	1.2	1.2	0.51	0.23	0.59	0.215	0.075	4.3 4	0.434
Vinyl chloride	μ g /m³	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	0.204 1	0.074	1.65	0.165
trans-1,2-Dichloroethene	μ g /m³	< 0.32	<0.32	<0.32	<0.32	<0.32	<0.32	0.317	0.079	630	63
cis-1,2-Dichloroethene	μ g /m³	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	0.317	0.095	630	63
1,1-Dichloroethene	μ g /m³	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	0.317	0.052	2100	210
1,1-Dichloroethane	μ g /m³	0.080 J	< 0.32	<0.32	<0.32	0.066 J	<0.32	0.324	0.040	15	1.5
1,1,1-Trichloroethane	μ g /m³	8.3	0.11	0.11	0.12	0.10 J	0.11 J	0.436	0.065	52000	5200
1,1,2-Trichloroethane	μ g /m³	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	0.36 ¹	0.11	1.5	0.15

NOTES: μg/m3 - micrograms per cubic meter

ppm - parts per million

- J The contaminant is present at a concentration greater than the Analytical Method Detection Limit, but less than the Reporting Limit.
- ¹ Indoor Air Screening Level is less than Reporting Limit. The USEPA has approved the use of the Reporting Limit as the screening level for this site due to the technical inability to accurately quantify the detection of these compounds at the current USEPA screening level.
- ² Per USEPA approved VIC Work Plan
- ³ Revised Action Threshold for PCE per USEPA e-mail dated February 17, 2012
- ⁴ Revised per USEPA's letter dated October 27, 2011 and as an accommodation to USEPA without waiver of Chamberlain's concerns expressed in its email to USEPA dated November 14, 2011.

SAMPLE ID NOMENCLATURE: First 2 letters identify sample type: SS - Sub-Slab, IA - Indoor Air, AA - Ambient Air, and EB - Equipment Blank The numeric value following the sample type identify the Residence ID Number



Appendix C - Analytical Reports

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Cedar Falls 704 Enterprise Drive Cedar Falls, IA 50613 Tel: 800-750-2401

TestAmerica Job ID: CVH1474

Client Project/Site: Chamberlain Vapor Sampling Client Project Description: Chamberlain - TO-15 Scans

For:

TERRACON - CEDAR FALLS 6612 Chancellor Drive Suite 102 Cedar Falls, IA 50613

Attn: Mike Hagemeister

Authorized for release by: 8/29/2012 4:29:43 PM

Brian C. Freether

Brian C. Graettinger Operations Manager

brian.graettinger@testamericainc.com

.....LINKS

ARCHIVE DOCUMENT

Review your project results through

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Have a Question?



Visit us at:

www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

US EPA ARCHIVE DOCUMENT

Job ID: CVH1474

Laboratory: TestAmerica Cedar Falls

Client: TERRACON - CEDAR FALLS

Project/Site: Chamberlain Vapor Sampling

Narrative

Analyzed by TestAmerica - Knoxville, TN.

TestAmerica Job ID: CVH1474

Sample Summary

Client: TERRACON - CEDAR FALLS

Project/Site: Chamberlain Vapor Sampling

US EPA ARCHIVE DOCUMENT

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
CVH1474-01	IA-1-60-2	Air	08/22/12 09:18	08/22/12 14:45
CVH1474-02	IA-B-60-2	Air	08/22/12 09:20	08/22/12 14:45
CVH1474-03	IA-1-40-3	Air	08/22/12 11:26	08/22/12 14:45
CVH1474-04	IA-B-40-3	Air	08/22/12 11:28	08/22/12 14:45
CVH1474-05	IA-1-47-2	Air	08/22/12 10:43	08/22/12 14:45
CVH1474-06	IA-B-47-2	Air	08/22/12 10:53	08/22/12 14:45
CVH1474-07	IA-1-33-3	Air	08/22/12 11:06	08/22/12 14:45
CVH1474-08	IA-B-33-3	Air	08/22/12 11:10	08/22/12 14:45
CVH1474-09	IA-1-38-3	Air	08/22/12 13:08	08/22/12 14:45
CVH1474-10	IA-B-38-3	Air	08/22/12 13:11	08/22/12 14:45
CVH1474-11	IA-B-20-5	Air	08/22/12 13:21	08/22/12 14:45
CVH1474-12	Blind Duplicate	Air	08/22/12 11:29	08/22/12 14:45

Matrix: Air

Matrix: Air

Matrix: Air

Client Sample Results

Client: TERRACON - CEDAR FALLS Project/Site: Chamberlain Vapor Sampling

TestAmerica Job ID: CVH1474

Client Sample ID: IA-1-60-2 Lab Sample ID: CVH1474-01

Date Collected: 08/22/12 09:18 Date Received: 08/22/12 14:45 Sample Container: Summa Canister

Method: EPA TO-15 - Air Sample Analysis - Subcontract

Analyte Result Qualifier RL MDL Unit D Analyst Analyzed Dil Fac 0.10 mg BCG 08/24/12 14:14 **Volatile Organic Compounds** See

> **Attached** Report.

Client Sample ID: IA-B-60-2 Lab Sample ID: CVH1474-02 Matrix: Air

Date Collected: 08/22/12 09:20 Date Received: 08/22/12 14:45

Sample Container: Summa Canister

Method: EPA TO-15 - Air Sample Analysis - Subcontract

Analyte Result Qualifier RL MDL Unit D Analyst Analyzed Dil Fac Volatile Organic Compounds 0.10 mq BCG 08/24/12 15:06 See

> Attached Report.

Client Sample ID: IA-1-40-3 Lab Sample ID: CVH1474-03 Matrix: Air

Date Collected: 08/22/12 11:26 Date Received: 08/22/12 14:45

Sample Container: Summa Canister

Method: EPA TO-15 - Air Sample Analysis - Subcontract

Result Qualifier RL MDL Unit Analyst Analyzed Dil Fac BCG Volatile Organic Compounds 0.10 mq 08/24/12 16:00 1.0 See

> **Attached** Report.

Client Sample ID: IA-B-40-3 Lab Sample ID: CVH1474-04

Date Collected: 08/22/12 11:28 Date Received: 08/22/12 14:45

Sample Container: Summa Canister

Method: EPA TO-15 - Air Sample Analysis - Subcontract

Result Qualifier RLMDL Unit Dil Fac Analyte D Analyst Analyzed BCG 08/25/12 06:45 **Volatile Organic Compounds** 0.10 mg 1.0 See

Attached

Report.

Client Sample ID: IA-1-47-2 Lab Sample ID: CVH1474-05

Date Collected: 08/22/12 10:43 Date Received: 08/22/12 14:45

Sample Container: Summa Canister

Method: EPA TO-15 - Air Sample Analysis - Subcontract

Analyte Result Qualifier RL MDL Unit D Analyst Analyzed Dil Fac 0.10 BCG 08/24/12 17:49 **Volatile Organic Compounds** mg See

Attached

Report.

Matrix: Air

Matrix: Air

Matrix: Air

Client Sample Results

Project/Site: Chamberlain Vapor Sampling

Client: TERRACON - CEDAR FALLS TestAmerica Job ID: CVH1474

Client Sample ID: IA-B-47-2 Lab Sample ID: CVH1474-06 Matrix: Air

Date Collected: 08/22/12 10:53 Date Received: 08/22/12 14:45 Sample Container: Summa Canister

Method: EPA TO-15 - Air Sample Analysis - Subcontract Analyte Result Qualifier RL MDL Unit D Analyst Analyzed Dil Fac 0.10 mg BCG 08/24/12 18:44 **Volatile Organic Compounds** See

> **Attached** Report.

Client Sample ID: IA-1-33-3 Lab Sample ID: CVH1474-07

Date Collected: 08/22/12 11:06

Date Received: 08/22/12 14:45 Sample Container: Summa Canister

Method: EPA TO-15 - Air Sample Analysis - Subcontract

Analyte Result Qualifier RL MDL Unit D Analyst Analyzed Dil Fac Volatile Organic Compounds 0.10 mq BCG 08/24/12 19:46 See

> Attached Report.

Client Sample ID: IA-B-33-3 Lab Sample ID: CVH1474-08

Date Collected: 08/22/12 11:10 Date Received: 08/22/12 14:45

Sample Container: Summa Canister

Method: EPA TO-15 - Air Sample Analysis - Subcontract

Result Qualifier RL MDL Unit Analyst Analyzed Dil Fac BCG Volatile Organic Compounds 0.10 mq 08/24/12 20:40 1.0 See

> **Attached** Report.

Client Sample ID: IA-1-38-3 Lab Sample ID: CVH1474-09

Date Collected: 08/22/12 13:08 Date Received: 08/22/12 14:45

Sample Container: Summa Canister

Method: EPA TO-15 - Air Sample Analysis - Subcontract

Result Qualifier RLMDL Unit Dil Fac Analyte D Analyst Analyzed BCG 08/24/12 21:32 **Volatile Organic Compounds** 0.10 mg 1.0 See

> Attached Report.

Client Sample ID: IA-B-38-3

Lab Sample ID: CVH1474-10 Date Collected: 08/22/12 13:11 Matrix: Air

Date Received: 08/22/12 14:45

Sample Container: Summa Canister

Method: EPA TO-15 - Air Sample Analysis - Subcontract

Analyte Result Qualifier RL MDL Unit D Analyst Analyzed Dil Fac 0.10 BCG 08/24/12 22:25 **Volatile Organic Compounds** mg See

Attached

Report.

Client Sample Results

Client: TERRACON - CEDAR FALLS

Project/Site: Chamberlain Vapor Sampling

Lab Sample ID: CVH1474-11

TestAmerica Job ID: CVH1474

Matrix: Air

Date Collected: 08/22/12 13:21 Date Received: 08/22/12 14:45 Sample Container: Summa Canister

Client Sample ID: IA-B-20-5

Method: EPA TO-15 - Air Sample Analysis - Subcontract

Analyte Result Qualifier MDL Unit D Analyst Analyzed Dil Fac RL 0.10 BCG 08/24/12 23:19 mg **Volatile Organic Compounds** See

> Attached Report.

Client Sample ID: Blind Duplicate

Lab Sample ID: CVH1474-12 Date Collected: 08/22/12 11:29 Matrix: Air

Date Received: 08/22/12 14:45 Sample Container: Summa Canister

US EPA ARCHIVE DOCUMENT

Method: EPA TO-15 - Air Sample Analysis - Subcontract

Result Qualifier Analyte RL MDL Unit D Analyst Analyzed Dil Fac Volatile Organic Compounds 0.10 mg BCG 08/25/12 00:13 See

> **Attached** Report.

H2H230437 Analytical Report	1
Sample Receipt Documentation	32
Total Number of Pages	36



TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. CVH1474

Terracon

Lot #: H2H230437

Brian Graettinger

TestAmerica Cedar Falls 704 Enterprise Drive Cedar Falls, IA 50613-0625

TESTAMERICA LABORATORIES, INC.

Jamie A. McKinney
Project Manager

August 29, 2012

ANALYTICAL METHODS SUMMARY

H2H230437

	ANALYTICAL
PARAMETER	METHOD
Volatile Organics by TO15	EPA-2 TO-15

References:

"Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air", EPA-625/R-96/010b, January 1999.

SAMPLE SUMMARY

H2H230437

WO # 5	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
,=	· —			
MV9W5	001	IA-1-60-2	08/22/12	
MV9W7	002	IA-B-60-2	08/22/12	
MV9W8	003	IA-1-40-3	08/22/12	11:26
MV9W9	004	IA-B-40-3	08/22/12	11:28
MV9XD	005	IA-1-47-2	08/22/12	10:43
MV9XF	006	IA-B-47-2	08/22/12	10:53
MV9XG	007	IA-1-33-3	08/22/12	11:06
MV9XH	008	IA-B-33-3	08/22/12	11:10
MV9XJ	009	IA-1-38-3	08/22/12	13:08
MV9XK	010	IA-B-38-3	08/22/12	13:11
MV9XL	011	IA-B-20-5	08/22/12	13:21
MV9XM	012	BLIND DUPLICATE	08/22/12	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: eolor, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

PROJECT NARRATIVE

The results reported herein are applicable to the samples submitted for analysis only. If you have any questions about this report, please call (865) 291-3000 to speak with the TestAmerica project manager listed on the cover page.

This report shall not be reproduced except in full, without the written approval of the laboratory.

The original chain of custody documentation is included with this report.

Sample Receipt

There were no problems with the condition of the samples received.

Quality Control and Data Interpretation

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

EPA methods TO-14A and TO-15 specify the use of humidified "zero air" as the blank reagent for canister cleaning, instrument calibration and sample analysis. Ultra-high purity humidified nitrogen from a cryogenic reservoir is used in place of "zero air" by TestAmerica Knoxville.

Can Certification Comments:

The EPA method requires that all target analytes in the continuing calibration verification standard be within 30% difference from the initial calibration. The daily standard sample recovery for vinyl chloride was above QC limits on MJ 7/24/12. However, since the recovery was high, and vinyl chloride was not detected above the reporting limit in the associated samples, the validity of the data is unaffected.

CERTIFICATION SUMMARY

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Knoxville	ACLASS	DoD ELAP		ADE-1434
TestAmerica Knoxville	Arkansas	State Program	6	88-0688
TestAmerica Knoxville	California	State Program	9	2423
TestAmerica Knoxville	Colorado	State Program	8	N/A
TestAmerica Knoxville	Connecticut	State Program	1	PH-0223
TestAmerica Knoxville	Florida	NELAC	4	E87177
TestAmerica Knoxville	Georgia	State Program	4	906
TestAmerica Knoxville	Hawaii	State Program	9	N/A
TestAmerica Knoxville	Indiana	State Program	5	C-TN-02
TestAmerica Knoxville	lowa	State Program	7	375
TestAmerica Knoxville	Kansas	NELAC	7	E-10349
TestAmerica Knoxville	Kentucky	State Program	4	90101
TestAmerica Knoxville	Louisiana	NELAC	6	LA110001
TestAmerica Knoxville	Louisiana	NELAC	6	83979
TestAmerica Knoxville	Maryland	State Program	3	277
TestAmerica Knoxville	Michigan	State Program	5	9933
TestAmerica Knoxville	Minnesota	NELAC	5	047-999-429
TestAmerica Knoxville	Nevada	State Program	9	TN00009
TestAmerica Knoxville	New Jersey	NELAC	2	TN001
TestAmerica Knoxville	New York	NELAC	2	10781
TestAmerica Knoxville	North Carolina	North Carolina DENR	4	64
TestAmerica Knoxville	North Carolina	North Carolina PHL	4	21705
TestAmerica Knoxville	Ohio	OVAP	5	CL0059
TestAmerica Knoxville	Oklahoma	State Program	6	9415
TestAmerica Knoxville	Pennsylvania	NELAC	3	68-00576
TestAmerica Knoxville	South Carolina	State Program	4	84001
TestAmerica Knoxville	Tennessee	State Program	4	2014
TestAmerica Knoxville	Texas	NELAC	6	T104704380-TX
TestAmerica Knoxville	USDA	USDA .		P330-11-00035
TestAmerica Knoxville	Utah	NELAC	8	QUAN3
TestAmerica Knoxville	Virginia	State Program	3	165
TestAmerica Knoxville	Washington	State Program	10	C593
TestAmerica Knoxville	West Virginia	West Virginia DEP	3	345
TestAmerica Knoxville	West Virginia	West Virginia DHHR (DW)	3	9955C
TestAmerica Knoxville	Wisconsin	State Program	5	998044300

TestAmerica Knoxville | Wisconsin | State Program | 5 | 998044300 |
Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

JS EPA ARCHIVE DOCUMENT

TestAmerica Cedar Falls

Client Sample ID: IA-1-60-2

GC/MS Volatiles

Lot-Sample # '

H2H230437 - 001

Work Order#

MV9W51AA

Matrix....:

AIR

Date Sampled ...: Prep Date.....

08/22/2012

Date Received ..: Analysis Time:

08/23/2012 08/24/2012

08/24/2012 Prep Batch #....: 2240073

Analysis Time: 14:14

Dilution Factor.:

1

Method....:

TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
Trichloroethene	0.023 J	0.040	0.014	0.12 J	0,21	0.075
1,1-Dichloroethene	ND	0.080	0,013	ND	0.32	0.052
trans-1,2-Dichloroethene	ND	0.080	0.020	ND	0.32	0.079
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
Tetrachloroethene	0.19	0.080	0,016	1.3	0.54	0.11

SURROGATE 4-Bromofluorobenzene

PERCENT RECOVERY

94

LABORATORY CONTROL LIMITS (%)

60 - 140

Qualifiers

Estimated result. Result is less than RL.

 $Result \ (ug/m3) = Result \ (ppb(v/v))[unrounded] \ * \ (Molecular \ Weight/24.45)$

 $Reporting \ Limit \ (ug/m3) = Reporting \ Limit \ (ppb(v/v))[unrounded] \ * \ (Molecular \ Weight/24.45)$

MDL (ug/u3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

JS EPA ARCHIVE DOCUMENT

TestAmerica Cedar Falls

Client Sample ID: IA-B-60-2

GC/MS Volatiles

Lot-Sample #

H2H230437 - 002

Work Order#

MV9W71AA

Matrix....:

AIR

Date Sampled ...:

08/22/2012

Date Received ..:

08/23/2012

Prep Date....: Prep Batch #....: 08/24/2012

Analysis Time:

08/24/2012

Dilution Factor.:

2240073 1

Analysis Time:

15:06

Method....:

TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Tetrachloroethene	0,12	0,080	0.016	0.81	0.54	0.11
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0,32	0.095
trans-1,2-Dichloroethene	ND	0.080	0.020	ND	0,32	0.079
1,1-Dichloroethene	ND	0.080	0.013	ND	0.32	0.052
Trichloroethene	0,027 J	0.040	0.014	0.14 J	0.21	0.075
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0,065
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
SURROGATE		PERCENT RECOVERY		CON	LABORATORY CONTROL LIMITS (%)	
4-Bromofluorobenzene	· · · · · · · · · · · · · · · · · · ·	93		60 -	140	-

Qualifiers

Estimated result. Result is less than RL.

 $Result \ (ug/m3) = Result \ (ppb(v/v)) \{unrounded] \ * \ (Molecular \ Weight/24.45)$

 $Reporting\ Limit\ (ug/m3) = Reporting\ Limit\ (ppb(v/v))[unrounded]\ *\ (Molecular\ Weight/24,45)$

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

EPA ARCHIVE DOCUMENT

TestAmerica Cedar Falls

Client Sample ID: IA-1-40-3

GC/MS Volatiles

Lot-Sample #

H2H230437 - 003

Work Order #

MV9W81AA

Matrix....:

AIR

Date Sampled...:
Prep Date....:

08/22/2012 08/24/2012 Date Received ..:

08/23/2012

Analysis Time:

08/24/2012

Prep Batch #....:
Dilution Factor.:

2240073

Analysis Time....: Method.....: 16:00 TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
1,1-Dichloroethane	ND	0.080	0.010	ND	0,32	0.040
Vinyl chloride	ND	0,080	0.029	ND	0.20	0.074
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
Trichloroethene	0,031 J	0.040	0.014	0,17 J	0.21	0.075
1,1-Dichloroethene	ND	0.080	0.013	ND	0.32	0.052
trans-1,2-Dichloroethene	ND	0.080	0.020	ND	0.32	0.079
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
Tetrachloroethene	0.076 J	0.080	0.016	0.51 J	0.54	0.11

SURROGATE

4-Bromofluorobenzene

PERCENT RECOVERY

90

LABORATORY CONTROL LIMITS (%)

60 - 140

Qualifiers

J Estimated result. Result is less than RL.

 $Result \ (ug/m3) = Result \ (ppb(v/v))[unrounded] \ * \ (Molecular \ Weight/24.45)$

 $Reporting\ Limit\ (ug/m3) = Reporting\ Limit\ (ppb(v/v))[unrounded]\ *\ (Molecular\ Weight/24,45)$

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

AIR

60 - 140

JS EPA ARCHIVE DOCUMENT

TestAmerica Cedar Falls

Client Sample ID: IA-B-40-3

GC/MS Volatiles

Lot-Sample # H2H230437 - 004 Work Order# MV9W91AA Matrix....:

91

Date Sampled ...: Date Received ..: 08/23/2012 08/22/2012 Prep Date....: 08/24/2012 Analysis Time: 08/25/2012 Prep Batch #....: 2240073 Analysis Time: 06:45

TO-15

Dilution Factor.: 1 Method....:

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Tetrachloroethene	0.21	0.080	0.016	1.4	0.54	0.11
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
trans-1,2-Dichloroethene	ND	0.080	0.020	ND	0.32	0.079
1,1-Dichloroethene	ND	0.080	0.013	ND	0.32	0.052
Trichloroethene	0.037 J	0.040	0.014	0.20 J	0,21	0.075
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0,065
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
1,1-Dichloroethane	ND	0.080	0.010	ND	0,32	0.040
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
SURROGATE		PERCENT RECOVERY		LABORATORY CONTROL LIMITS (%)		

<u>Oualifiers</u>

4-Bromofluorobenzene

Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

AIR

TestAmerica Cedar Falls

Client Sample ID: IA-1-47-2

GC/MS Volatiles

Lot-Sample # H2H230437 - 005 **Work Order** # MV9XD1AA **Matrix......:**

 Date Sampled...:
 08/22/2012
 Date Received..:
 08/23/2012

 Prep Date.......:
 08/24/2012
 Analysis Time....:
 08/24/2012

 Prep Batch #....:
 2240073
 Analysis Time....:
 17:49

Dilution Factor.: 1 Method..........: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
1,1,2-Trichloroethane	ND	0,080	0.021	ND	0.44	0.11
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
/inyl chloride	ND	0.080	0.029	ND	0,20	0.074
Prichloroethene	0,035 J	0,040	0.014	0.19 J	0.21	0.075
,1-Dichloroethene	ND	0.080	0.013	ND	0.32	0.052
ans-1,2-Dichloroethene	ND	0.080	0.020	ND	0.32	0.079
is-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
etrachlorocthene	0.018 J	0.080	0.016	0.12 J	0.54	0.11

PERCENT CONTROL
SURROGATE RECOVERY LIMITS (%)

4-Bromofluorobenzene 91 60 - 140

Oualifiers

J Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

 $Reporting \ Limit \ (ug/m3) = Reporting \ Limit \ (ppb(v/v))[unrounded] \ * \ (Molecular \ Weight/24.45)$

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Client Sample ID: IA-B-47-2

GC/MS Volatiles

Work Order# MV9XF1AA Matrix....: AIR

Date Sampled ...: Prep Date....:

Lot-Sample #

08/22/2012 08/24/2012

H2H230437 - 006

Date Received ..: Analysis Time:

08/23/2012 08/24/2012

2240073 Prep Batch #....:

Analysis Time: 18:44

Dilution Factor.:

Method....:

TO-15

RAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
rachloroethene	0.017 J	0.080	0.016	0,11 J	0.54	0.11
1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
ns-1,2-Dichloroethene	ND	0.080	0.020	ND	0.32	0.079
-Dichloroethene	ND	0.080	0.013	ND	0.32	0.052
chloroethene	0.025 J	0.040	0.014	0.14 J	0.21	0.075
,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
yl chloride	ND	0.080	0.029	ND	0.20	0.074
-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
RROGATE		PERCENT RECOVERY		CON	ORATORY ITROL ITS (%)	
RROGATE					ITS (%)	_

Qualifiers

J Estimated result. Result is less than RL.

 $Result \ (ug/m3) = Result \ (ppb(v/v))[unrounded] \ ^* \ (Molecular \ Weight/24.45)$

 $Reporting\ Limit\ (ug/m3) = Reporting\ Limit\ (ppb(v/v))[unrounded]\ \star\ (Molecular\ Weight/24.45)$

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Client Sample ID: IA-1-33-3

GC/MS Volatiles

Lot-Sample # H2H230437 - 007 Work Order # MV9XG1AA Matrix....... AIR

 Date Sampled...:
 08/22/2012
 Date Received..:
 08/23/2012

 Prep Date........:
 08/24/2012
 Analysis Time......
 08/24/2012

 Prep Batch #.....:
 2240073
 Analysis Time.......
 19:46

 Dilution Factor.:
 1
 Method...............
 TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
1,1,2-Trichloroethane	ND	0,080	0.021	ND	0.44	0.11
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0,065
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
Vinyl chloride	ND	0.080	0,029	ND	0.20	0.074
Trichloroethene	0.046	0.040	0.014	0.24	0.21	0.075
trans-1,2-Dichloroethene	ND	0.080	0.020	ND	0.32	0.079
1,1-Dichloroethene	ND	0.080	0.013	ND	0,32	0,052
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
Tetrachloroethene	0.055 J	0.080	0.016	0.37 J	0.54	0.11

SURROGATE PERCENT CONTROL
SURROGATE RECOVERY LIMITS (%)

4-Bromofluorobenzene 88 60 - 140

Qualifiers

J Estimated result. Result is less than RL.

 $Result \, (ug/m3) = Result \, (ppb(v/v)) [unrounded] \, * \, (Molecular \, Weight/24.45)$

 $Reporting\ Limit\ (ug/m3) = Reporting\ Limit\ (ppb(v/v))[unrounded]\ *\ (Molecular\ Weight/24.45)$

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Client Sample ID: IA-B-33-3

GC/MS Volatiles

Lot-Sample #

H2H230437 - 008

Work Order #

MV9XH1AA

Matrix....:

60 - 140

AIR

Date Sampled...:
Prep Date.....:

08/22/2012 08/24/2012 Date Received ..:

08/23/2012 08/24/2012

Prep Batch #....:
Dilution Factor.:

4-Bromofluorobenzene

2240073

Analysis Time....:
Analysis Time....:

20:40

Method....:

90

TO-15

PARAMETER .	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Tetrachloroethene	0.079 J	0.080	0.016	0.54 J	0.54	0.11
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
1,1-Dichloroethene	ND	0.080	0.013	ND	0.32	0.052
trans-1,2-Dichloroethene	ND	0.080	0,020	ND	0.32	0.079
Frichloroethene	0.043	0.040	0.014	0.23	0.21	0.075
Vinyl chloride	ND	0.080	0,029	ND	0.20	0.074
1,1-Dichloroethane	ND	0.080	0.010	ND.	0.32	0.040
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
		DEDCENT			ORATORY	
SURROGATE .		PERCENT RECOVERY			ITROL ITS (%)	

Qualifiers

J Estimated result. Result is less than RL.

 $Result \, (ug/m3) = Result \, (ppb(v/v)) [unrounded] \, * \, (Molecular \, Weight/24.45)$

 $Reporting\ Limit\ (ug/m3) = Reporting\ Limit\ (ppb(v/v))[unrounded]\ *\ (Molecular\ Weight/24.45)$

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

EPA ARCHIVE DOCUMENT

TestAmerica Cedar Falls

Client Sample ID: IA-1-38-3

GC/MS Volatiles

Lot-Sample #	H2H230437 - 009	Work Order #	MV9XJ1AA	Matrix:	AIR

Date Sampled ...: Date Received ..: 08/23/2012 08/22/2012 Analysis Time: 08/24/2012 Prep Date: 08/24/2012 Prep Batch #....: Analysis Time: 21:32 2240073 **Dilution Factor.:** TO-15 Method....:

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
1,1,2-Trichloroethane	ND	0,080	0.021	ND	0.44	0.11
1,1,1-Trichloroethane	0.040 J	0,080	0.012	0,22.J	0.44	0.065
1,1-Dichloroethane	ND	0,080	0.010	ND	0,32	0.040
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
Trichloroethene	ND	0.040	0.014	ND	0.21	0.075
1,1-Dichloroethene	ND	0.080	0.013	ND	0.32	0.052
trans-1,2-Dichloroethene	ND	0.080	0.020	ND ·	0.32	0,079
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
Tetrachloroethcne	0.022 J	0.080	0.016	0,15 J	0.54	0,11

PERCENT CONTROL SURROGATE RECOVERY LIMITS (%) 60 - 140

87 4-Bromofluorobenzene

Oualifiers

Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

 $Reporting \ Limit \ (ug/m3) = Reporting \ Limit \ (ppb(v/v))[unrounded] \ * \ (Molecular \ Weight/24.45)$

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

AIR

TestAmerica Cedar Falls

Client Sample ID: IA-B-38-3

GC/MS Volatiles

Lot-Sample # H2H230437 - 010 Work Order # MV9XK1AA Matrix....: Date Sampled ...: Date Received ..: 08/23/2012 08/22/2012 Prep Date: 08/24/2012 Analysis Time: 08/24/2012 Prep Batch #; 2240073 Analysis Time: 22:25 **Dilution Factor.:** Method: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0,095
Tetrachloroethene	0.050 J	0.080	0.016	0,34 J	0.54	0.11
trans-1,2-Dichloroethene	ND	0.080	0.020	ND	0.32	0.079
1,1-Dichloroethene	ND	0.080	0.013	ND	0.32	0.052
Trichloroethene	ND	0.040	0.014	ND	0.21	0.075
1,1,1-Trichloroethane	0.035 J	0.080	0.012	0,19 J	0.44	0.065
Vinyl chloride	ND	0:080	0.029	ND	0.20	0.074
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
1,1,2-Trichloroethane	ND	0,080	0.021	ND	0.44	0.11
SURROGATE _.		PERCENT RECOVERY		CON	BORATORY VTROL ITS (%)	
4-Bromofluorobenzene		94		60 -	140	-

Oualifiers

J Estimated result. Result is less than RL.

 $Result \, (ug/m3) = Result \, (ppb(v/v)) [unrounded] \, * \, (Molecular \, Weight/24.45)$

 $Reporting \ Limit \ (ug/m3) = Reporting \ Limit \ (ppb(v/v))[unrounded] \ ^* \ (Molecular \ Weight/24.45)$

MDL(ug/m3) = MDL(ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Client Sample ID: IA-B-20-5

GC/MS Volatiles

Lot-Sample #	I2H230437 - 011		Work Order#	MV9XL1AA	Matr	ix: AIR	
Date Sampled: Prep Date: Prep Batch #: Dilution Factor.:	08/22/2012 08/24/2012 2240073		Date Received: Analysis Time: Analysis Time: Method	08/23/2012 08/24/2012 23:19 TO-15			
PARAMETER		RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v)	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
1,1,2-Trichloroethane		ND	0.080	0,021	ND ND	0.44	0.11
1,1,1-Trichloroethane		0,30	0.080	0.012	1.7	0.44	0,065
1,1-Dichloroethane		ND	0.080	0.010	ND	0.32	0.040
Vinyl chloride		ND	0:080	0.029	ND	0.20	0.074
Trichloroethene		0.017 J	0.040	0.014	0.090 J	0.21	0.075
trans-1,2-Dichloroethen	e	ND	0.080	0.020	ND	0.32	0,079
1,1-Dichloroethene		ND	0.080	0.013	ND	0.32	0,052
cis-1,2-Dichloroethene		ND	0.080	0.024	ND	0,32	0,095
Tetrachloroethene		ND	0,080	0.016	ND	0.54	0.11
SURROGATE			PERCENT RECOVERY		CON	ORATORY TROL TS (%)	

60 - 140

93

Oualifiers

4-Bromofluorobenzene

J Estimated result. Result is less than RL.

 $Result \, (ug/m3) = Result \, (ppb(v/v))[unrounded] \, * \, (Molecular \, Weight/24.45)$

 $Reporting\ Limit\ (ug/m3) = Reporting\ Limit\ (ppb(v/v))[unrounded]\ *\ (Molecular\ Weight/24.45)$

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

0.44

LABORATORY

CONTROL

0.11

TestAmerica Cedar Falls

Client Sample ID: BLIND DUPLICATE

GC/MS Volatiles

0,021

ND

Lot-Sample #	H2H230437 - 012		Work Order #	MV9XM1AA	Matr	ix AIR	
Date Sampled:	08/22/2012		Date Received:	08/23/2012			
Prep Date:	08/24/2012		Analysis Time:	08/25/2012			
Prep Batch #;	2240073		Analysis Time:	00:13			
Dilution Factor.;	1		Method:	TO-15			
PARAMETER		RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Tetrachloroethene		0.039 J	0.080	0.016	0.26 J	0.54	0.11
cis-1,2-Dichloroethene	,	ND	0.080	0.024	ND	0.32	0,095
1,1-Dichloroethene		ND	0.080	0.013	ND	0.32	0.052
trans-1,2-Dichloroethe	ne	ND	0.080	0.020	ND	0.32	0.079
Trichloroethene		0.027 J	0.040	0.014	0.14 J	0.21	0.075
Vinyl chloride		ND	0.080	0.029	ND	0.20	0.074
1,1-Dichloroethane		ND	0.080	0.010	ND	0.32	0.040
1,1,1-Trichloroethane		ND	0.080	0.012	ND	0.44	0.065

SURROGATE	RECOVERY	LIMITS (%)
4-Bromofluorobenzene	88	60 - 140

0.080

PERCENT

ND

<u>Oualifiers</u>

1,1,2-Trichloroethane

Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

 $Reporting \ Limit \ (ug/m3) = Reporting \ Limit \ (ppb(v/v)) [unrounded] \ \star \ (Molecular \ Weight/24.45)$

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

EPA ARCHIVE DOCUMENT

TestAmerica Cedar Falls

Client Sample ID: INTRA-LAB BLANK

GC/MS Volatiles

Work Order #

MWA2W1AA

Matrix....:

AIR

Prep Date:

Lot-Sample #

08/22/2012 08/24/2012

2240073

H2H270000 - 073B

Date Received ..:

08/23/2012

Analysis Time: Analysis Time:

08/24/2012

13:23

Prep Batch #: Dilution Factor.:

Method....:

TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
1,1,2-Trichloroethane	ND	0,080	0.021	ND ND	0.44	0,11
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0,040
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
Trichloroethene	ND	0.040	0.014	ND	0.21	0.075
1,1-Dichloroethene	ND	0.080	0.013	ND	0.32	0.052
trans-1,2-Dichloroethene	ND	0.080	0.020	ND	0.32	0,079
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
Tetrachloroethene	ND	0.080	0.016	ND	0,54	0.11

SURROGATE 4-Bromofluorobenzene PERCENT RECOVERY

96

LABORATORY CONTROL LIMITS (%)

60 - 140

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

 $Reporting \ Limit \ (ug/m3) = Reporting \ Limit \ (ppb(v/v))[unrounded] \ * \ (Molecular \ Weight/24.45)$

 $MDL \; (ug/m3) = MDL \; (ppb(v/v)) [unrounded] \; \star \; (Molecular \; Weight/24.45)$

Client Sample ID: CHECK SAMPLE

GC/MS Volatiles

Lot-Sample #	H2H270000 - 073C		Work Order #	MWA2W1AC		Matrix:	AIR
Prep Date: Prep Batch #; Dilution Factor.;	08/22/2012 08/24/2012 2240073		Date Received: Analysis Time: Analysis Time: Method	08/23/2012 08/24/2012 10:42 TO-15			
PARAMETER		SPIKE AMOUNT (ppb(v/v))	MEASURED AMOUNT (ppb(v/v))	SPIKE AMOUNT (ug/m3)	MEASURED AMOUNT (ug/m3)	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloroethene		5,00	4.94	33.9	33,5	99	70 - 130
is-1,2-Dichloroethen	•	5.00	4.71	19.8	18.7	94	70 - 130
rans-1,2-Dichloroethe	ene	5.00	4.99	19.8	19.8	100	70 - 130
,1-Dichloroethene		5.00	5.30	19.8	21.0	106	70 - 130
Trichloroethene		5.00	5.05	26,9	27.1	101	70 - 130
Vinyl chloride		5.00	4.31	12.8	11.0	86	70 - 130
,1-Dichloroethane		5.00	3.78	20.2	15.3	76	70 - 130
,1,1-Trichloroethane		5.00	4.26	27.3	23.3	85	70 - 130
,1,2-Trichloroethane		5.00	4.00	27.3	21.8	80	70 - 130
SURROGATE			PERCENT RECOVERY			LABORATORY CONTROL LIMITS (%)	
4-Bromofluorobenzen	e		96			60 - 140	

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

 $Reporting \ Limit \ (ug/m3) = Reporting \ Limit \ (ppb(v/v))[unrounded] \ * \ (Molecular \ Weight/24.45)$

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Test America Knoxville GC/MS Volatiles

Lot ID:

H2H230437

Batch #: 9962

Matrix: MethCod:

Air 7M Can #: 12149

Method:

		Reporting	
Parameter	Result	Limit	Units
cis-1,2-Dichloroethene	ND	0.080	ppb (v/v)
trans-1,2-Dichloroethene	ND	0.080	ppb (v/v)
Tetrachloroethene	ND	0.080	ppb (v/v)
Trichloroethene	ND	0.040	ppb (v/v)
Vinyl chloride	ND	0.080	ppb (v/v)
1,1-Dichloroethane	ND	0.080	ppb (v/v)
1,1-Dichloroethene	ND	0.080	ppb (v/v)
1,1,1-Trichloroethane	ND	0.080	ppb (v/v)
1,1,2-Trichloroethane	ND	0.080	ppb (v/v)

Test America Knoxville GC/MS Volatiles

Lot ID:

H2H230437

Batch #: 9972

Matrix: MethCod:

Air 7M Can #: 93165

Method:

		Reporting	
Parameter	Result	Limit	Units
cis-1,2-Dichloroethene	ND	0.080	ppb (v/v)
trans-1,2-Dichloroethene	ND	0.080	ppb (v/v)
Tetrachloroethene	ND	0.080	ppb (v/v)
Trichloroethene	ND	0.040	ppb (v/v)
Vinyl chloride	ND	0.080	ppb (v/v)
1,1-Dichloroethane	ND	0.080	ppb (v/v)
1,1-Dichloroethene	ND	0.080	ppb (v/v)
1,1,1-Trichloroethane	ND	0.080	ppb (v/v)
1,1,2-Trichloroethane	ND	0.080	ppb (v/v)

Test America Knoxville GC/MS Volatiles

Lot ID:

H2H230437

Batch #: 9978

Matrix: MethCod:

Air 7M Can #: 12455

Method:

		Reporting	
Parameter	Result	Limit	Units
cis-1,2-Dichloroethene	ND	0.080	ppb (v/v)
trans-1,2-Dichloroethene	ND	0.080	ppb (v/v)
Tetrachloroethene	ND	0.080	ppb (v/v)
Trichloroethene	ND	0.040	ppb (v/v)
Vinyl chloride	ND	0.080	ppb (v/v)
1,1-Dichloroethane	ND	0.080	ppb (v/v)
1,1-Dichloroethene	ND	0.080	ppb (v/v)
1,1,1-Trichloroethane	ND	0.080	ppb (v/v)
1,1,2-Trichloroethane	ND	0.080	ppb (v/v)

Test America Knoxville GC/MS Volatiles

Lot ID:

H2H230437

Batch #: 10012

Matrix: MethCod:

Air 7M Can #: 6675

Method:

		Reporting	
Parameter	Result	Limit	Units
cis-1,2-Dichloroethene	ND	0.080	ppb (v/v)
trans-1,2-Dichloroethene	ND	0.080	ppb (v/v)
Tetrachloroethene	ND	0.080	ppb (v/v)
Trichloroethene	ND	0.040	ppb (v/v)
Vinyl chloride	ND	0.080	ppb (v/v)
1,1-Dichloroethane	ND	0.080	ppb (v/v)
1,1-Dichloroethene	ND	0.080	ppb (v/v)
1,1,1-Trichloroethane	ND	0.080	ppb (v/v)
1,1,2-Trichloroethane	ND	0.080	ppb (v/v)

Test America Knoxville GC/MS Volatiles

Lot ID:

H2H230437

Batch #: 10019

Matrix:

Air

Can #: 1124

MethCod: 7M Method:

	Reporting				
Parameter	Result	Limit	Units		
cis-1,2-Dichloroethene	ND	0.080	ppb (v/v)		
trans-1,2-Dichloroethene	ND	0.080	ppb (v/v)		
Tetrachloroethene	ND	0.080	ppb (v/v)		
Trichloroethene	ND	0.040	ppb (v/v)		
Vinyl chloride	ND	0.080	ppb (v/v)		
1,1-Dichloroethane	ND	0.080	ppb (v/v)		
1,1-Dichloroethene	ND	0.080	ppb (v/v)		
1,1,1-Trichloroethane	ND	0.080	ppb (v/v)		
1,1,2-Trichloroethane	ND	0.080	ppb (v/v)		

Test America Knoxville GC/MS Volatiles

Lot ID:

H2H230437

Batch #: 10026

Matrix:

Air

Can #: 05357

MethCod:

7M

EPA-2 TO-15 Method:

		Reporting	
Parameter	Result	Limit	Units
cis-1,2-Dichloroethene	ND	0.080	ppb (v/v)
trans-1,2-Dichloroethene	ND	0.080	ppb (v/v)
Tetrachloroethene	ND	0.080	ppb (v/v)
Trichloroethene	ND	0.040	ppb (v/v)
Vinyl chloride	ND	0.080	ppb (v/v)
1,1-Dichloroethane	ND	0.080	ppb (v/v)
1,1-Dichloroethene	ND	0.080	ppb (v/v)
1,1,1-Trichloroethane	ND	0.080	ppb (v/v)
1,1,2-Trichloroethane	ND	0.080	ppb (v/v)

Test America Knoxville GC/MS Volatiles

Lot ID:

H2H230437

Batch #: 10027

Matrix:

Air

Can #: 3283N

MethCod: 7M Method:

	Reporting					
Parameter	Result	Limit	Units			
cis-1,2-Dichloroethene	ND	0.080	ppb (v/v)			
trans-1,2-Dichloroethene	ND	0.080	ppb (v/v)			
Tetrachloroethene	ND	0.080	ppb (v/v)			
Trichloroethene	ND	0.040	ppb (v/v)			
Vinyl chloride	ND	0.080	ppb (v/v)			
1,1-Dichloroethane	ND	0.080	ppb (v/v)			
1,1-Dichloroethene	ND	0.080	ppb (v/v)			
1,1,1-Trichloroethane	ND	0.080	ppb (v/v)			
1,1,2-Trichloroethane	ND	0.080	ppb (v/v)			

Test America Knoxville GC/MS Volatiles

Lot ID:

H2H230437

Batch #: 10027

Matrix:

Air

Can #: 7505

MethCod: 7M

-- Method:

	Reporting				
Parameter	Result	Limit	Units		
cis-1,2-Dichloroethene	ND	0.080	ppb (v/v)		
trans-1,2-Dichloroethene	ND	0.080	ppb (v/v)		
Tetrachloroethene	ND	0.080	ppb (v/v)		
Trichloroethene	ND	0.040	ppb (v/v)		
Vinyl chloride	ND	0.080	ppb (v/v)		
1,1-Dichloroethane	ND	0.080	ppb (v/v)		
1,1-Dichloroethene	ND	0.080	ppb (v/v)		
1,1,1-Trichloroethane	ND	0.080	ppb (v/v)		
1,1,2-Trichloroethane	ND	0.080	ppb (v/v)		

Test America Knoxville GC/MS Volatiles

Lot ID:

H2H230437

Batch #: 10028

Matrix:

Air

Can #: 7478

MethCod: 7M

Method:

	Reporting				
Parameter	Result	Limit	Units		
cis-1,2-Dichloroethene	ND	0.080	ppb (v/v)		
trans-1,2-Dichloroethene	ND	0.080	ppb (v/v)		
Tetrachloroethene	ND	0.080	ppb (v/v)		
Trichloroethene	ND	0.040	ppb (v/v)		
Vinyl chloride	ND	0.080	ppb (v/v)		
1,1-Dichloroethane	ND	0.080	ppb (v/v)		
1,1-Dichloroethene	ND	0.080	ppb (v/v)		
1,1,1-Trichloroethane	ND	0.080	ppb (v/v)		
1,1,2-Trichloroethane	ND	0.080	ppb (v/v)		

Test America Knoxville GC/MS Volatiles

Lot ID:

H2H230437

Batch #: 10029

Matrix: MethCod:

Air 7M Can #: 93104

Method:

		Reporting	
Parameter	Result	Limit	Units
cis-1,2-Dichloroethene	ND	0.080	ppb (v/v)
trans-1,2-Dichloroethene	ND	0.080	ppb (v/v)
Tetrachloroethene	ND	0.080	ppb (v/v)
Trichloroethene	ND	0.040	ppb (v/v)
Vinyl chloride	ND	0.080	ppb (v/v)
1,1-Dichloroethane	ND	0.080	ppb (v/v)
1,1-Dichloroethene	ND	0.080	ppb (v/v)
1,1,1-Trichloroethane	ND	0.080	ppb (v/v)
1,1,2-Trichloroethane	ND	0.080	ppb (v/v)

Test America Knoxville GC/MS Volatiles

Lot ID:

H2H230437

Batch #: 10031

Matrix:

<u>Air</u>

Can #: S1493

MethCod:

7M

Method: EPA-2 TO-15

		Reporting	
Parameter	Result	Limit	Units
cis-1,2-Dichloroethene	ND	0.080	ppb (v/v)
trans-1,2-Dichloroethene	ND	0.080	ppb (v/v)
Tetrachloroethene	ND	0.080	ppb (v/v)
Trichloroethene	ND	0.040	ppb (v/v)
Vinyl chloride	ND	0.080	ppb (v/v)
1,1-Dichloroethane	ND	0.080	ppb (v/v)
1,1-Dichloroethene	ND	0.080	ppb (v/v)
1,1,1-Trichloroethane	ND	0.080	ppb (v/v)
1,1,2-Trichloroethane	ND	0.080	ppb (v/v)

Test America Knoxville GC/MS Volatiles

Lot ID:

H2H230437

Batch #: 10032

Matrix:

Air

Can #: 93170

MethCod: 7M

Method:

Parameter	Result	Limit	Units
cis-1,2-Dichloroethene	ND	0.080	ppb (v/v)
trans-1,2-Dichloroethene	ND	0.080	ppb (v/v)
Tetrachloroethene	ND	0.080	ppb (v/v)
Trichloroethene	ND	0.040	ppb (v/v)
Vinyl chloride	ND	0.080	ppb (v/v)
1,1-Dichloroethane	ND	0.080	ppb (v/v)
1,1-Dichloroethene	ND	0.080	ppb (v/v)
1,1,1-Trichloroethane	ND	0.080	ppb (v/v)
1,1,2-Trichloroethane	ND	0.080	ppb (v/v)

US EPA ARCHIVE DOCUMENT

TAL Knoxville

phone 865-291-3000 fax 865-584-4315 5815 Middlebrook Pike Knoxville, TN 37921

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

THE LEADER IN ENVIRONMENTAL TESTING

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								Landfill Gas
İ								Soil Gas
	္ဌ							niA JueldmA
	\$303		7.2.7		201		7	Sample: 1 ype
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	4							9461-G MT8A
r								EPA 25C
	5							EPA 3C
	ouit out							A41-OT
	Ž							31-OT
8.h.	3							Canister ID
	Sampled by: /							Flow Controller
								Canister Vacuum in Field, 'Hg F (Stop)
9	202	, 			nd Time			Canister Vacuum in Field, "Hg (Start)
1.4.	30-27				sis Turnaround	ecify)	fy)	Time Stop
\	2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2	S	i,		Analysis	dard Sp	Rush (Specify	Time Start
	Z Z	itact:			٨	Standard	Rus	
	Phone: 402-	Site Con TAL Cor						Sample Date(s)
	Company: Tecra con	cellor Dr. Ste 102 15, IA 50613	Phone: 3/9- 277- 4016	FAX:	Project Name: Chamber lain 14fg.	Site/location: Water loo, IA	, , , , , , , , , , , , , , , , , , ,	Sample Identification

K190 K180 1463 K130

7.2--2.5

-29.0

21-22-8 Sample Date(s)

Sample Identification

05357 6h181 7478

> -2.0 -2.5

-29.0 -39.5

0956 1196

-28:0

1128

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1132

				_					1
IA-1-47-2		1901	1043	-29.5	<i>-a.</i> S	051 1043 -29.5 -2.5 K133 6675 X	6675	×	
IA-B-47-2		11011	1053	-30.0	-2.0	101 1053 -30.0 -2.0 K115 12455 X	55461	X	<u> </u>
Sampled by :				Temperature (Fahrenheit)	(Fahrenheit			2 Boxus Reigh A Dist Treg	
		Interior		Ambient				At custody seals intact	
Hob Bergman	Start			130				994 8/25/12	
	Stop			°08				2 boxes Fed x #5 4208 2710 1478	
				Pressure (inches of Hg)	ches of Hg)			75 HI OILE BOTH	
		Interior		Ambient					
	Start		-					12 CANS/12 Flows	
	Stop			-				/	
Special Instructions/QC Requirements & Comments:	s:								
1 to	P. Credicor	, co x	and	meh	7000	ojstos (, terra	com AND mohans moister a terracon.com	

·) š menagemeist dcclearye.

Canisters Shipped by: Doubled off a 165+ America	Date/Time:	Canisters Received by:	
Samples Relinquished by: [bd. Mymun 440	Date/Time: 8/2ス// こ	Registed by: All sounds 4/3/12	950
Relinquished by:	Date/Time:	Redeived by:	

- 8-40-3

40-3

B-60-

TA-

TA-1-60

US EPA ARCHIVE DOCUMENT

TAL Knoxville

phone 865-291-3000 fax 865-584-4315 5815 Middlebrook Pike Knoxville, TN 37921

ਮੁਕਸਤਾਸਿਤ Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

Test Americo

THE LEADER IN ENVIRONMENTAL TESTING

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								Soil Gas																			
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								EPA 25C																Ö			
ج							i	EPA 3C																Ø Z	` `	1	4
owt								21-OT A41-OT	×	~	×		×	×										g	3	100	₹
Seg	3								-	×		X									···			نو		1/2	
Rob ,								Canister ID	93165	7505	93104	3283N	S-1493	11159										er@+	5. 63.		The state of the s
Sampled By: Rob Begman								Flow Controller ID	KISI	16233	18186	K200	Kyoi	K372										AND mehagemeister@terracon.com	eceived by:	B	<i>t</i> : 7
	1			Ī				Canister Vacuum in Field, 'Hg F	-3.0	-2.0	-0.5	0.h-	-6.5		Temperature (Fahrenheit)				thes of Hg)					nehage	Canisters Received by:	Regeived by	Received by
Hagemeister	202	1			nd Time			Canister Vacuum in Field, "Hg (Start)	-27.0	-28.5	-29.5	-30.0		-38E	Temperature	Ambient	220	80°	Pressure (inches of Hg)	Ambient				ON			A
Hile H	' ')			Analysis Turnaround Time	pecify)	ify)	Time Stop	901	olli	3081	11311	1331	१४४										com A			
•	402- 2	}			Analysis	Standard (Specify)	Rush (Specify)	Time Start	11,25	1132	1309	1335	1751	1019		Interior				Interior				•		22/12) -
Project Manager:	Phone:	Site Contact: TAL Contact:				St	R	Sample Date(s)	21-22-8								Start	Stop			Start	Stop		terre	Date/Time:	Date/Time:	Date/Time:
Client Contact Information		ellor Dr. Ste 102	e: 319-277-4016		Project Name: Chamberlain Afg.	10	#Od	Sample Identification	IA-1-33-3	IA-8-33-3	IA-1-38-3	IA-B-38-3	IA-B-20-5	Blind Duplicate	Sampled by :		Kob Bergman						Special Instructions/QC Requirements & Comments:	email results to Accleary@terracon	Canisters Shipped by:	1440	2



THE LEADER IN ENVIRONMENTAL TESTING

H2H230437

704 Enterprise Drive • Cedar Falls, IA 50613 800-750-2401 • 319-277-2425 Fax

Sample Receipt and Temperature Log Form

Client: Terracon		Project: Chamberlay, MFG
City: <u>Caclar</u> ,	9/11, JA	_
Date: 8.221/2 Re	eceiver's Initials: 💋	Time (Delivered): 14:45
Temperature Record:	Thermometer:	Courier:
Cooler ID# (If Applicable)	IR - 111531565 'D' IR - 111531506 'E' IR - 61854108 'From	FedEx TA Field Services
°C / On Ice	101681126	US Postal Service Other Spee-Dee
Temp Blank Temperature out of cor	npliance	Evantions Noted
Custody seals present? Yes Custody seals intact? Yes No Non-Conformance re	eport started	Exceptions Noted Sample(s) not received in a cooler. Samples(s) received same day of sampling. Evidence of a chilling process No Temp. Blank. Inside temperature of cooler recorded.
		Temperature not taken:

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST Lot Number: 42420437

US EPA ARCHIVE DOCUMENT

Review Items	Yes	%	NA	If No, what was the problem?	Comments/Actions Taken
1. Do sample container labels match COC?				☐ 1a Do not match COC	A Contraction of the Contraction
(IDs, Dates, Times)				☐ 1b Incomplete information	
				☐ 1c Marking smeared	
				□ 1d Label torn	
	\			☐ 1e No label	
	<u> </u>			☐ 1f COC not received	
				□ Ig Other:	
2. Is the cooler temperature within limits? (> freezing				□ 2a Temp Blank =	
temp. of water to 6 °C, VOST: 10°C)				□ 2b Cooler Temp =	
	Ź			□ 2c Cooling initiated for recently	
	,			collected samples, ice present.	
 Were samples received with correct chemical preservative (excluding Encore)? 	· · · · · · · · · · · · · · · · · · ·	,	7	. □ 3a Sample preservative =	
4. Were custody seals present/intact on cooler and/or				□ 4a Not present	Company and the state of the st
containers?	\			□ 4b Not intact	
	7			□ 4c Other:	
5. Were all of the samples listed on the COC received?	7			☐ 5a Samples received-not on COC	
	١			☐ 5b Samples not received-on COC	
6. Were all of the sample containers received intact?	7	1		□ óa Leaking	
•	7			□ 6b Broken	
7. Were VOA samples received without headspace?			7	7a Headspace (VOA only)	
8. Were samples received in appropriate containers?	7			☐ 8a Improper container	
9. Did you check for residual chlorine, if necessary?				□ 9a Could not be determined due	
			1	to matrix interference	
10. Were samples received within holding time?	7	\		☐ 10a Holding time expired	
11. For rad samples, was sample activity info. provided?			J	☐ Incomplete information	
12. For 1613B water samples is pH<9?				Af no, was pH adjusted to pH 7 - 9	Annual Control of the
•	:)	with sulfuric acid?	and the state of t
13. Are the shipping containers intact?		\		□ 13a Leaking	
)			□ 13b Other:	
14. Was COC relinquished? (Signed/Dated/Timed)	7			☐ 14a Not relinquished	
15. Are tests/parameters listed for each sample?	7			☐ 15a Incomplete information	
16. Is the matrix of the samples noted?	7			☐ 15a Incomplete information	THE PARTY OF THE P
17. Is the date/time of sample collection noted?	/	,		☐ 15a Incomplete information	
18. Is the client and project name/# identified?	7			☐ 15a Incomplete information	
19. Was the sampler identified on the COC?	/			□ 19a Other	
Ouote #: \$73 9 PM Instructions: 1/1	ہر ا				
		\		, ,	
Sample Receiving Associate:	Conti	77		Date: 4/23/12	QA026R23.doc, 022812

US EPA ARCHIVE DOCUMENT Test America - Knoxville ---- Air Canister Dilution Log Lot Number: <u>H2H230437</u>

	Comments	(005g	7966	9700)	61001	7,001	8466	7466	£700)	6200)	1007	10031	10031	
	Final Pres. Pf (psig)													
	Vol (mL)													
	Serial Dilution Can #													
ilutions	Third InCan Final Pres. Pf (psig)													
Subsequent Dilutions	Second In-can Final Pres. Pf (psig)													
Sub	First InCan Final Pres. Pf (psig)												:	
	Final Pres. Pf (psig)												.i	,
	` Initial Pres. Pi (in)			,										411/
	Pbarr (in)		4											tr/8
	 						ļ							#
	Analyst/Date													we can to getting
	Adj. Initial Pres. (- in or + psig)	١	\	\	~	١	\	\	\	1	١	١	١	3
	Pres. upon receipt (-in or + psig)	-3.8	-3.0	2.2	1-3.2	13.6	4.9	2.4.3	137	-1.5	-4.1	15.4	-35	7
e	Can #	7478	12149 🗸	05357	1124	<i>≻</i> 9499	12455 /	93165	7505 🗸	93104 ~	3283N	S1493 V	481 11159	con# 93170
Initial Can Pressure	Sample ID	MV9W5	MV9W7	му9м8	MV9W9	му9хр	MV9XF	MV9XG	му9хн	LX6VM	MV9XK	MV9XL	мх6лм	
	Pbarr (in)	28.95											7	
	Tedlar Bag Time	MA.											7	
	Analyst/Date	Mesha						Pá	ige 4	3 of	46		>	,

con# 93170 /

US EPA ARCHIVE DOCUMENT

TAL Knoxville

5815 Middlebrook Pike Knoxville, TN 37921 phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

ESTANGED CO

								ĺ				-	١					¥
Client Contact Information	Project Manager:	nager: Mike		Vagemeister		Sampled By: Rob Berginan	Rob B	929	nar			of	3	COCs				
Company: Terracon	Phone:	402-330-	17	25.			į		٠,		_							1
cellor Dr.	Site Contac	1			•										\vdash	-		
City/State/Zip Cedar Falls, IA Sole13	TAL Contact:	it:			.			- -				(uo					(uo	
Phone: 3/9- 277- 4016												itoes	. :	_			iloəs	
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Project Name: Chamber lain 1949.		Analysis Turnaround Time	ırnaround	Time		,		_				iori	į,i ;				ton	_
4	<u>ဗ</u>	Standard Specify)	ify)				٠					ni Vì					ni yì	
PO#		Rush (Specify)			=							ped					peoi	
											976	32G 2	dΛ	<u> </u>	ıir.	SE		
		•	- ;		Canister							:əld)	į əj	ıiΑ.	/ Ju:	II G		
	Sample			Field, "Hg	Field, 'Hg	Flow Controller		S1-0	ナレ-(£ A	S A	her	dui			ອ II ເກັນກ		_
Sample Identification	Date(s)	Time Start	Time Stop	(Start)	(Stop)	Q	Canister ID	DΤ	-	\dashv	\dashv	10	?S	\dashv	┥	ᅱ	\dashv	
IA-1-100-2	21-22-8	7660	8160	-29.0	-2.5	K190	2478	×						×				
IA- R-60-2	-	0932 0	- 0830	-39.5	-2.5	K180	6h181	×					1	×	ļ			
74-1-40-3			-	_	-2.0	1463	05357	×	 	-				×	-	<u> </u>	ļ	T
74-8-40-3		(0/2		-978.0	-2.5	K130	1124	×		 	-			K	-	ļ	-	
IA-1-47-2		'	~^	-29.5	-2.5	K133	6675	×					1.	×	-		ļ	
IA-B-47-2		11011	1053 -	-30.0	-2.0	K115	55h&1	×						×				
Sampled by:			Te	emperature (Temperature (Fahrenheit)							١,				l		_
	:	Interior	Ā	Ambient														
Aob Bergman	. Start			720														
	Stop			°08														
			Pr	Pressure (inches of Hg)	les of Hg												_	
		Interior	Aı	Ambient							-							_
	Start	•																
	Stop																 	_
Special Instructions/QC Requirements & Comments:																		_
email results to accleary eterracon.com	erracor		AND	meh	negr	mehagemeister cterracon.com	terra	Š	ĝ	۲								
			,		١											,		
Canisters Shipped by: Dayped off a lest America	Date/Time:				anisters Rece	Canisters Received by:	82212	19.	14:45									ſ
Samples Relinquished by: Lot Buymun 1 440	Date/Time: 8/23 /	115			Received by:	oy:				.								
Relinquished by:	Date/Time:				Received by:	cy:							•					

US EPA ARCHIVE DOCUMENT

TAL Knoxville

5815 Middlebrook Pike Knoxville, TN 37921 phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

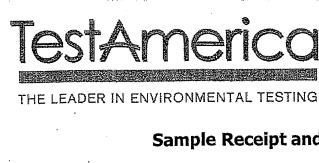
TESTAMETICO
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

	Droject Mar	7	1. pe 1	4000	July 10	Sampled Bv:	Rob Be	Way:	VV		N	٩	ဒ၁၀၁	ø		
Client Contact Illoffliation	Phone:	,	20.7	200				>								
Address: 6/612 Chancellor Dr. Ste 102	Site Contact:	') 1 1 1 1 1 1))))))	-	Site Contact:					. (0	(i) (i)				(u
Phone: 3/9-277-4016	200									-	·	lounos				oitoes
FAX:																sə)
6 1		Analysis	Analysis Turnaround Time	nd Time				,,,,			lon ni	<u> </u>			<u></u>	ou uj
Site/location: Waterleo IA	S)	Standard (Specify)	oecify)						,		Viio	fuo:				Vjjos
#Od		Rush (Specify	ify)								<u>.</u>		- B		_	eds
Gamnia Idantification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, 'Hg (Stop)	Flow Controller	r Canister ID	81-OT	TO-14A'	EPA 25C	ASTM D-1946	Sample Typ	TiA 100bri	Ambient Air	Soil Gas Landfill Gas	Other (Please
TA-1-33-3	8-21-12			-27.0	-3.0	KISI	93165	×				*	×			
IA-8-33-3		1132	0[-28.5	-2.0	16233	7505	×	-				×			
IA-1-38-3		1309	1308	-29.5	-0.5	16186	43104	×					×			
74-8-38-3		1335	1311	-30.0	0.h-	K200	3283N	×				i, a	3			
I.A. B. 20.5		1341	1321	-30.0+	-30.04-6.5	Kyoi	5-1493	×				6 7 3. 6 7 7	×			
Rling Duplicate		1019	1129	-285	-2.5	K372	11159	×				2 4	\geq		-	
Sampled by .				Temperatus	Temperature (Fahrenheit)	(
		Interior		Ambient											.	T
Rob Bergman	Start			·CL												
)	Stop	-		800												_
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	Start															
	Stop															_
Special Instructions/QC Requirements & Comments:																
email results to decleary e terracon.com	go tem	acon.		440	mehag	AND mehagemeister@terracon.com	ere te	۾ ج	COM,	00	,					
Canistars Shinned hv	Date/Time:				Canisters	Canisters Received by:										

Relinquished by:

Received by:



704 ENTERPRISE DRIVE • CEDAR FALLS, IA 50613 800-750-2401 • 319-277-2425 FAX

Sample Receipt and Temperature Log Form

Client: Terracon		P	roject: <u>Chamberl</u>	ain, mf6
City: <u>Ceolar</u> &	9115, 4			
Date: 8.22/2 Re	eceiver's Initials:	20	Time (Deliver	red): <u>/५:५</u> 5
Temperature Record:	<u>Thermometer</u>	:	Courier:	
Cooler ID# (if Applicable)	IR - 111531565	5 'D'	UPS	TA Courier
	IR - 111531506	6 E	FedEx	TA Field Services
	IR - 61854108	'Front'	FedEx Ground	Client
°C / On Ice	— 101681126		US Postal Service	· Other
O/Onice	101081120		Spee-Dee	
Temp Blank				
Temperature out of co	npliance		•	•
		Exc	ceptions Noted	
Custody seals present?		Sa	ample(s) not received	in a cooler.
Custody seals intact?		Sa Sa	amples(s) received sa	me day of sampling.
Yes No	,	<u> </u>		
			Evidence of a chilling	ng process
Non-Conformance r	eport started		o Temp. Blank. Inside	e temperature of
			emperature not taken:	

*Refer to SOP CF-SS-01 for Temperature Criteria

F:\DeimerlyC\QA Folder\QA Forms & Log Book pgs\Cooler Receipt rev17.doc

Expert

www.testamericainc.com

Visit us at:

<u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Cedar Falls 704 Enterprise Drive Cedar Falls, IA 50613 Tel: 800-750-2401

TestAmerica Job ID: CVH1667

Client Project/Site: Chamberlain Vapor Sampling Client Project Description: Chamberlain - TO-15 Scans

For:

TERRACON - CEDAR FALLS 6612 Chancellor Drive Suite 102 Cedar Falls, IA 50613

Attn: Mike Hagemeister

Authorized for release by: 9/6/2012 3:20:02 PM

Brian C. Harther

Brian C. Graettinger Operations Manager

brian.graettinger@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

US EPA ARCHIVE DOCUMENT

Job ID: CVH1667

Laboratory: TestAmerica Cedar Falls

Client: TERRACON - CEDAR FALLS

Project/Site: Chamberlain Vapor Sampling

Narrative

Analyzed by TestAmerica - Knoxville, TN.

Sample Summary

Client: TERRACON - CEDAR FALLS Project/Site: Chamberlain Vapor Sampling

US EPA ARCHIVE DOCUMENT

TestAmerica Job ID: CVH1667

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
CVH1667-01	IA-B-76-2	Air	08/24/12 10:09	08/24/12 14:30

Client Sample Results

Client: TERRACON - CEDAR FALLS

Project/Site: Chamberlain Vapor Sampling

Lab Sample ID: CVH1667-01

TestAmerica Job ID: CVH1667

Matrix: Air

Date Collected: 08/24/12 10:09
Date Received: 08/24/12 14:30
Sample Container: Summa Canister

Client Sample ID: IA-B-76-2

US EPA ARCHIVE DOCUMENT

Method: EPA TO-15 - Air Sample A	nalysis - Sub	ocontract							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Analyst	Analyzed	Dil Fac
Volatile Organic Compounds	See		0.10		mg		BCG	08/28/12 14:53	1.0

Attached Report.

H2H270403 Analytical Report	1
Sample Receipt Documentation	10
Total Number of Pages	12

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Terracon

Lot #: H2H270403

Brian Graettinger

TestAmerica Cedar Falls 704 Enterprise Drive Cedar Falls, IA 50613-0625

TESTAMERICA LABORATORIES, INC.

Jamie A. McKinney
Project Manager

September 5, 2012

ANALYTICAL METHODS SUMMARY

H2H270403

	ANALYTICAL
PARAMETER	METHOD
Volatile Organics by TO15	EPA-2 TO-15

References:

"Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air", EPA-625/R-96/010b, January 1999.

SAMPLE SUMMARY

H2H270403

 WO # SAMPLE# CLIENT SAMPLE ID
 SAMPLED DATE
 SAMP DATE

 MWAT6 001 IA-B-76-2
 08/24/12 10:09

NOTE (S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

PROJECT NARRATIVE H2H270403

The results reported herein are applicable to the samples submitted for analysis only. If you have any questions about this report, please call (865) 291-3000 to speak with the TestAmerica project manager listed on the cover page.

This report shall not be reproduced except in full, without the written approval of the laboratory.

The original chain of custody documentation is included with this report.

Sample Receipt

The "Relinquished by" field on the chain of custody documentation did not contain a signature.

Quality Control and Data Interpretation

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

EPA methods TO-14A and TO-15 specify the use of humidified "zero air" as the blank reagent for canister cleaning, instrument calibration and sample analysis. Ultra-high purity humidified nitrogen from a cryogenic reservoir is used in place of "zero air" by TestAmerica Knoxville.

CERTIFICATION SUMMARY

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Knoxville	ACLASS	DoD ELAP		ADE-1434
TestAmerica Knoxville	Arkansas	State Program	6	88-0688
TestAmerica Knoxville	California	State Program	9	2423
TestAmerica Knoxville	Colorado	State Program	8	N/A
TestAmerica Knoxville	Connecticut	State Program	1	PH-0223
TestAmerica Knoxville	Florida	NELAC	4	E87177
TestAmerica Knoxville	Georgia	State Program	4	906
TestAmerica Knoxville	Hawaii	State Program	9	N/A
TestAmerica Knoxville	Indiana	State Program	5	C-TN-02
TestAmerica Knoxville	Iowa	State Program	7	375
TestAmerica Knoxville	Kansas	NELAC	7	E-10349
TestAmerica Knoxville	Kentucky	State Program	4	90101
TestAmerica Knoxville	Louisiana	NELAC	6	LA110001
TestAmerica Knoxville	Louisiana	NELAC	6	83979
TestAmerica Knoxville	Maryland	State Program	3	277
TestAmerica Knoxville	Michigan	State Program	5	9933
TestAmerica Knoxville	Minnesota	NELAC	5	047-999-429
TestAmerica Knoxville	Nevada	State Program	9	TN00009
TestAmerica Knoxville	New Jersey	NELAC	2	TN001
TestAmerica Knoxville	New York	NELAC	2	10781
TestAmerica Knoxville	North Carolina	North Carolina DENR	4	64
TestAmerica Knoxville	North Carolina	North Carolina PHL	4	21705
TestAmerica Knoxville	Ohio	OVAP	5	CL0059
TestAmerica Knoxville	Oklahoma	State Program	6	9415
TestAmerica Knoxville	Pennsylvania	NELAC	3	68-00576
TestAmerica Knoxville	South Carolina	State Program	4	84001
TestAmerica Knoxville	Tennessee	State Program	4	2014
TestAmerica Knoxville	Texas	NELAC	6	T104704380-TX
TestAmerica Knoxville	USDA	USDA		P330-11-00035
TestAmerica Knoxville	Utah	NELAC	8	QUAN3
TestAmerica Knoxville	Virginia	State Program	3	165
TestAmerica Knoxville	Washington	State Program	10	C593
TestAmerica Knoxville	West Virginia	West Virginia DEP	3	345
TestAmerica Knoxville	West Virginia	West Virginia DHHR (DW)	3	9955C
TestAmerica Knoxville	Wisconsin	State Program	5	998044300

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

AIR

60 - 140

US EPA ARCHIVE DOCUMENT

TestAmerica Cedar Falls

Client Sample ID: IA-B-76-2

GC/MS Volatiles

H2H270403 - 001 Work Order # MWAT61AA Matrix....: Lot-Sample # Date Sampled ...: Date Received ..: 08/25/2012 08/24/2012 08/28/2012 Prep Date....: Analysis Time: 08/28/2012 Prep Batch #....: 2241119 Analysis Time: 14:53 **Dilution Factor.:** TO-I5 1 Method....:

104

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
1,1,1-Trichloroethane	0.048 J	0.080	0.012	0.26 J	0.44	0.065
Trichloroethene	0.024 J	0.040	0.014	0.13 J	0.21	0.075
1,1-Dichloroethene	ND	0.080	0.013	ND	0.32	0.052
rans-1,2-Dichloroethene	ND	0.080	0.020	ND	0.32	0,079
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
Fetrachloroethene	0.025 J	0.080	0.016	0.17 J	0.54	0.11
					ORATORY	
SURROGATE		PERCENT RECOVERY			/TROL ITS (%)	

Oualifiers

4-Bromofluorobenzene

J Estimated result. Result is less than RL.

 $Result \ (ug/m3) = Result \ (ppb(v/v))[unrounded] \ * \ (Molecular \ Weight/24.45)$

 $Reporting\ Limit\ (ug/m3) = Reporting\ Limit\ (ppb(v/v))[unrounded]\ *\ (Molecular\ Weight/24.45)$

 $MDL \ (ug/m3) = MDL \ (ppb(v/v))[unrounded] \ ^{\star} \ (Molecular \ Weight/24.45)$

 ${\tt TO-14 _rev5MDL_DOD.rpt \ version \ 5.004 \ 09/13/2011}$

EPA ARCHIVE DOCUMENT

TestAmerica Cedar Falls

Client Sample ID: INTRA-LAB BLANK

GC/MS Volatiles

Lot-Sample # H2H280000 - 119B Work Order# MWC031AA Matrix....: AIR 08/25/2012 08/24/2012 Date Received ..: Prep Date....: 08/28/2012 Analysis Time....: 08/28/2012 Prep Batch #....: 13:53 2241119 Analysis Time....: **Dilution Factor.:** 1 Method....: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Tetrachloroethene	ND	0.080	0.016	ND	0.54	0.11
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
trans-1,2-Dichloroethene	ND	0.080	0.020	ND	0.32	0.079
1,1-Dichloroethene	ND	0.080	0.013	ND	0.32	0.052
Trichloroethene	ND	0,040	0.014	ND	0.21	0.075
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
SURROGATE		PERCENT RECOVERY		CON	OORATORY ITROL ITS (%)	
4-Bromofluorobenzene		103		60 -	140	-

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

 $Reporting \ Limit \ (ug/m3) = Reporting \ Limit \ (ppb(v/v)) [unrounded] \ * \ (Molecular \ Weight/24.45)$

EPA ARCHIVE DOCUMENT

TestAmerica Cedar Falls

Client Sample ID: CHECK SAMPLE

GC/MS Volatiles

Lot-Sample #	H2H280000 - 119C		Work Order #	MWC031AC		Matrix:	AIR
Prep Date: Prep Batch #: Dilution Factor.:	08/24/2012 08/28/2012 2241119		Date Received: Analysis Time: Analysis Time: Method:	08/25/2012 08/28/2012 10:56 TO-15			
PARAMETER		SPIKE AMOUNT (ppb(v/v))	MEASURED AMOUNT (ppb(v/v))	SPIKE AMOUNT (ug/m3)	MEASURED AMOUNT (ug/m3)	PERCENT RECOVERY	RECOVERY LIMITS
Vinyl chloride		5.00 ·	5.68	12.8	14.5	114	70 - 130
I, I-Dichloroethane		5.00	5.32	20.2	21.5	106	70 - 130
1,1,1-Trichloroethane		5.00	6.19	27.3	33,8	124	70 - 130
Frichloroethene		5.00	5.43	26.9	29.2	109	70 - 130
,1-Dichloroethene		5.00	5.22	19.8	20.7	104	70 - 130
rans-1,2-Dichloroethe	ne	5.00	5.18	19.8	20.6	104	70 - 130
,1,2-Trichloroethane		5.00	5.43	27.3	29.6	109	70 - 130
cis-1,2-Dichloroethene	•	5.00	5,26	19.8	20.9	105	70 - 130
Tetrachloroethene		5,00	5.40	33.9	36,6	108	70 - 130
SURROGATE			PERCENT RECOVERY			LABORATORY CONTROL LIMITS (%)	
4-Bromofluorobenzene)		102	<u> </u>		60 - 140	

 $Result \ (ug/m3) = Result \ (ppb(v/v))[unrounded] \ * \ (Molecular \ Weight/24.45)$

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

 $MDL \ (ug/m3) = MDL \ (ppb(v/v))[unrounded] \ * \ (Molecular \ Weight/24.45)$

Test America Knoxville GC/MS Volatiles

Lot ID:

H2H270403

Batch #: 10013

Matrix:

Air

Method:

Can #: 6598

MethCod:

7m

EPA-2 TO-15

	Reporting	
Result	Limit	Units
ND	0.080	ppb (v/v)
ND	0.080	ppb (v/v)
ND	0.080	ppb (v/v)
ND	0.040	ppb (v/v)
ND	0.080	ppb (v/v)
	ND	Result Limit ND 0.080 ND 0.080 ND 0.080 ND 0.040 ND 0.080 ND 0.080 ND 0.080 ND 0.080 ND 0.080 ND 0.080 ND 0.080

US EPA ARCHIVE DOCUMENT

TAL Knoxville

phone 865-291-3000 fax 865-584-4315 5815 Middlebrook Pike Knoxville, TN 37921

નિત્રમાત્રામાપ્ત Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

TestAmerico

THE LEADER IN ENVIRONMENTAL TESTING

Sampled By: Reb Bergman 1 of 1 cocs							Canister TO-146 TO-146 TO-146 EPA 26C ASTM D-1946 Other (Please 5 Sample Type Indoor Air Ambient Air Soil Gas Soil Gas	X X X X X X X X X X X X X X X X X X X			1 Box Recelles Subint Trap	with custody Sept intext,	1 get 425/12	150x red x#420g 2710 1629						here terracon, com			1. MM 6.24/2 14/30
- 330 - 2 de 2	#350 -050 -05			Analysis Turnaround Time	Standard (Specify)	Rush (Specify)	Canister Canister Vacuum in Vacuum in Field, "Hg Field, "Hg Fleid, "Hg Flow Controller (Start) (Stop) ID	1000 1009 -30,0-4.5 1392			Temperature (Fahrenheit)	Interior Ambient	80° 80°		Pressure (inches of Hg)	Interior Ambient	45.5% 43%	47.6% 44%		m.com And mehagemeisterctenaum.com		Received by:	
Project Manager: /	Site Con	TAL Contact:		Υ	Stan	Rus	Sample Date(s) Ti	8-23-12				Inte	Start	Stop		Inte	Start 4	Stop 4		etemace	Date/Time:	Date/Time:	\ <u>\</u> \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
Client Contact Information	Address: 10/012 Chancellar Dr. Swite 102	5, E.A.	Figure: 0/7/2017/10/dold	Project Name: Chambertain Afg.	**	PO #	Sample Identification	TA-8-76-2			Sampled by :		Rob. Colyman	\					Special Instructions/QC Requirements & Comments:	email results to accleary eterracon, com	Canisters Shipped by:	Samples Relinquished by	The Soldward of

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST Lot Number: つけるいもののというと **US EPA ARCHIVE DOCUMENT**

		-			
<u> </u>	Review Items	Yes	No NA	If No, what was the problem?	Comments/Actions Taken
l-i	Do sample container labels match COC?			□ 1a Do not match COC	
	(IDs, Dates, Times)			☐ 1b Incomplete information	- Particular production of the control of the contr
				□ 1c Marking smeared	
				□ 1d Label torn	
·**		7		☐ ie No label	
		7		1f COC not received	
,	Is the cooler temperature within limits? (> freezing			1 1 Jo Temm Blonk =	
<u>i</u>	temp. of water to 6 °C, VOST: 10°C)			□ 2b Cooler Temp =	
		7		□ 2c Cooling initiated for recently	
				collected samples, ice present.	
<u></u>	Were samples received with correct chemical preservative (excluding Encore)?		<u> </u>	□ 3a Sample preservative =	
4	Were custody seals present/intact on cooler and/or			□ 4a Not present	
	containers?	/		□ 4b Not intact	
				□ 4c Other:	
ν.	Were all of the samples listed on the COC received?			☐ 5a Samples received-not on COC	
		\		☐ 5b Samples not received-on COC	
9	Were all of the sample containers received intact?	<u> </u>		□ 6a Leaking	
		7	,	□ 6b Broken	
7.	Were VOA samples received without headspace?		7	□ 7a Headspace (VOA only)	
∞.	Were samples received in appropriate containers?	7		☐ 8a Improper container	- Andrews - Andr
9.	Did you check for residual chlorine, if necessary?			☐ 9a Could not be determined due	
				to matrix interference	
10.	Were samples received within holding time?	7		□ 10a Holding time expired	Additional resolutions
11.	For rad samples, was sample activity info. provided?		٠	☐ Incomplete information	
12.	For 1613B water samples is pH<9?		7	If no, was pH adjusted to pH 7 - 9 with sulfuric acid?	
13.	Are the shipping containers intact?			□ 13a Leaking	
		<u> </u>		□ 13b Other:	
14.	Was COC relinquished? (Signed/Dated/Timed)		7	D14a Not relinquished	
15.	Are tests/parameters listed for each sample?	7		☐ 15a Incomplete information	, Alabahar
16.	Is the matrix of the samples noted?	7		□ 15a Incomplete information	
17.	Is the date/time of sample collection noted?	7		☐ 15a Incomplete information	
18.	Is the client and project name/# identified?	7		□ 15a Incomplete information	
19.	Was the sampler identified on the COC?	7		□ 19a Other	
Ö	Quote #: 87309 PM Instructions:				
	,				
Sa	Sample Receiving Associate: Many	M		Date: \$125/12	QA026R23.doc, 022812

Lot Number: <u>H2H270403</u>

US EPA ARCHIVE DOCUMENT

Test America - Knoxville ---- Air Canister Dilution Log

	Comments	10013
	Final Pres. Pf (psig)	
	Vol (mL)	
	Serial Dilution Can #	
ilutions	Third InCan Final Pres. Pf (psig)	
Subsequent Dilutions	First Second InCan InCan InCan Final Final Pres. Pf Pres. Pf (psig) (psig)	
Sub	First InCan Final Pres. Pf (psig)	
	Final Pres. Pf (psig)	
	Initial Pres. Pi (in)	
	I Initial / Pbarr Pres. S (in)	
	1 / 8	
	Analyst/Date	
	Adj. Initial Pres. (- in or + psig)	-
	Pres. Adj. upon Înitial receipt Pres. (-in or + + psig)	-3.3
e	Can #	6598 / - 3.3
Initial Can Pressure	Sample ID	MWAT6
	r Pbarr (in)	583
	Tedlar Bag Time	Æ
	- Analyst/Date	Stalia M9 28.9

US EPA ARCHIVE DOCUMENT

TAL Knoxville

5815 Middlebrook Pike Knoxville, TN 37921

phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

THE LEADER IN ENVIRONMENTAL TESTING **TestAmerica**

Analysis Turnaround Time	Client Contact Information			Hike H	ageme	! I	Sampled By: Rob Begman	Rob B	6 9	Mar	ام		of	-	SOCS			
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Sample Time Start Time) 	Sush (Spec	ify)										Э		 	ebec	
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Start SCO SO Ref: Hate: 24Aug12 Stop 78° Pressure (inches of Hg) Start 49.3% 43% mments: Date/Time: ate/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: Date/Date/Time: Date/Date/Date/Date/Date/Date/Date/Date/																 		
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THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Cedar Falls 704 Enterprise Drive Cedar Falls, IA 50613 Tel: 800-750-2401

TestAmerica Job ID: CVI1484

Client Project/Site: Chamberlain Vapor Sampling
Client Project Description: Chamberlain - TO-15 Scans

For:

TERRACON - CEDAR FALLS 6612 Chancellor Drive Suite 102 Cedar Falls, IA 50613

Attn: Mike Hagemeister

Authorized for release by: 9/27/2012 11:52:54 AM

Brian C. Harther

Brian C. Graettinger Operations Manager

brian.graettinger@testamericainc.com

Review your project results through

ARCHIVE DOCUMENT

Have a Question?



Visit us at:

www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

US EPA ARCHIVE DOCUMENT

Job ID: CVI1484

Laboratory: TestAmerica Cedar Falls

Client: TERRACON - CEDAR FALLS

Project/Site: Chamberlain Vapor Sampling

Narrative

Analyzed by TestAmerica - Knoxville, TN.

Sample Summary

Client: TERRACON - CEDAR FALLS Project/Site: Chamberlain Vapor Sampling

US EPA ARCHIVE DOCUMENT

TestAmerica Job ID: CVI1484

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
CVI1484-01	IA-B-73-3	Air	09/21/12 10:36	09/21/12 12:55
CVI1484-02	Duplicate (Blind)	Air	09/21/12 10:37	09/21/12 12:55

Client Sample Results

Client: TERRACON - CEDAR FALLS

Project/Site: Chamberlain Vapor Sampling

Client Sample ID: IA-B-73-3 Lab Sample ID: CVI1484-01

Matrix: Air

TestAmerica Job ID: CVI1484

Date Received: 09/21/12 12:55 Sample Container: Summa Canister

Date Collected: 09/21/12 10:36

Method: EPA TO-15 - Air Sample Analysis - Subcontract Analyte Result Qualifier RL MDL Unit D Analyst Analyzed Dil Fac 09/24/12 21:34 0.10 BCG mg **Volatile Organic Compounds** See

> **Attached** Report.

Client Sample ID: Duplicate (Blind) Lab Sample ID: CVI1484-02

Date Collected: 09/21/12 10:37 Matrix: Air

Date Received: 09/21/12 12:55 Sample Container: Summa Canister

US EPA ARCHIVE DOCUMENT

Method: EPA TO-15 - Air Sample Analysis - Subcontract Result Qualifier Analyte RL MDL Unit D Analyst Analyzed Dil Fac Volatile Organic Compounds 0.10 mg BCG 09/24/12 22:29 See

> **Attached** Report.

H2I240411 Analytical Report	1
Sample Receipt Documentation	12
Total Number of Pages	14



TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. CVI1484

Terracon

Lot #: H2I240411

Brian Graettinger

TestAmerica Cedar Falls 704 Enterprise Drive Cedar Falls, IA 50613-0625

TESTAMERICA LABORATORIES, INC.

Jamie A. McKinney Project Manager

September 26, 2012

ANALYTICAL METHODS SUMMARY

H2I240411

	ANALYTICAL
PARAMETER	METHOD
Volatile Organics by TO15	EPA-2 TO-15

References:

"Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air", EPA-625/R-96/010b, January 1999.

SAMPLE SUMMARY

H2I240411

	SAMPLED SAMP
WO # SAMPLE# CLIENT SAMPLE ID	DATE TIME
	6
MWN13 001 IA-B-73-3	09/21/12 10:36
MWN14 002 DUPLICATE (BLIND)	09/21/12 10:37
Antitat vol por por portion (per portion)	·

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

PROJECT NARRATIVE

The results reported herein are applicable to the samples submitted for analysis only. If you have any questions about this report, please call (865) 291-3000 to speak with the TestAmerica project manager listed on the cover page.

This report shall not be reproduced except in full, without the written approval of the laboratory.

The original chain of custody documentation is included with this report.

Sample Receipt

There were no problems with the condition of the samples received.

Quality Control and Data Interpretation

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

EPA methods TO-14A and TO-15 specify the use of humidified "zero air" as the blank reagent for canister cleaning, instrument calibration and sample analysis. Ultra-high purity humidified nitrogen from a cryogenic reservoir is used in place of "zero air" by TestAmerica Knoxville.

Can Certification Comments:

The EPA method requires that all target analytes in the continuing calibration verification standard be within 30% difference from the initial calibration. The daily standard and laboratory control sample recovery for 1,1,1-trichloroethane was above QC limits on MJ on 8/20/12. However, since all the recovery was high, and this analyte was not detected above the reporting limit in the associated samples, the validity of the data is unaffected.

CERTIFICATION SUMMARY

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Knoxville	ACLASS	DoD ELAP		ADE-1434
TestAmerica Knoxville	Arkansas	State Program	6	88-0688
TestAmerica Knoxville	California	State Program	9	2423
TestAmerica Knoxville	Colorado	State Program	8	N/A
TestAmerica Knoxville	Connecticut	State Program	1	PH-0223
TestAmerica Knoxville	Florida	NELAC	4	E87177
TestAmerica Knoxville	Georgia	State Program	4	906
TestAmerica Knoxville	Hawaii	State Program	9	N/A
TestAmerica Knoxville	Indiana	State Program	5	C-TN-02
TestAmerica Knoxville	Iowa	State Program	7	375
TestAmerica Knoxville	Kansas	NELAC	7	E-10349
TestAmerica Knoxville	Kentucky	State Program	4	90101
TestAmerica Knoxville	Louisiana	NELAC	6	LA110001
TestAmerica Knoxville	Louisiana	NELAC	6	83979
TestAmerica Knoxville	Maryland	State Program	3	277
TestAmerica Knoxville	Michigan	State Program	5	9933
TestAmerica Knoxville	Minnesota	NELAC	5	047-999-429
TestAmerica Knoxville	Nevada	State Program	9	TN00009
TestAmerica Knoxville	New Jersey	NELAC	2	TN001
TestAmerica Knoxville	New York	NELAC	2	10781
TestAmerica Knoxville	North Carolina	North Carolina DENR	4	64
TestAmerica Knoxville	North Carolina	North Carolina PHL	4	21705
TestAmerica Knoxville	Ohio	OVAP	5	CL0059
TestAmerica Knoxville	Oklahoma	State Program	6	9415
TestAmerica Knoxville	Pennsylvania	NELAC	3	68-00576
TestAmerica Knoxville	South Carolina	State Program	4	84001
TestAmerica Knoxville	Tennessee	State Program	4	2014
TestAmerica Knoxville	Texas	NELAC	6	T104704380-TX
TestAmerica Knoxville	USDA	USDA		P330-11-00035
TestAmerica Knoxville	Utah	NELAC	8	QUAN3
TestAmerica Knoxville	Virginia	State Program	3	165
TestAmerica Knoxville	Washington	State Program	10	C593
TestAmerica Knoxville	West Virginia	West Virginia DEP	3	345
TestAmerica Knoxville	West Virginia	West Virginia DHHR (DW)	3	9955C
TestAmerica Knoxville	Wisconsin	State Program	5	998044300

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Client Sample ID: IA-B-73-3

GC/MS Volatiles

Lot-Sample #

H2I240411 - 001

Work Order #

MWN131AA

Matrix,....:

AIR

Date Sampled ...:

09/21/2012 09/24/2012 Date Received ..:

09/24/2012

Prep Date....: Prep Batch #....: Analysis Time: Analysis Time:

09/24/2012

2268124

Method....:

21:34

Dilution Factor.:

TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
1,1-Dichlorocthene	0.017 J	0.080	0.013	0.066 J	0,32	0.052
trans-1,2-Dichloroethene	ND	0.080	0.020	ND	0.32	0.079
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0,32	0.095
Tetrachloroethene	ND	0.080	0.016	ND	0.54	0.11
1,1,2-Trichloroethane	ND	0.080	0.021	ND .	0:44	0.11
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
1.1.1-Trichloroethane	0.019 J	0.080	0.012	0.10 J	0.44	0.065
Trichloroethene	0.043	0.040	0.014	0.23	0.21	0.075

SURROGATE

4-Bromofluorobenzene

PERCENT RECOVERY

102

LABORATORY CONTROL LIMITS (%)

60 - 140

Oualifiers

Estimated result. Result is less than RL.

 $Result \ (ug/m3) = Result \ (ppb(v/v))[unrounded] \ * \ (Molecular \ Weight/24.45)$

 $Reporting\ Limit\ (ug/m3) = Reporting\ Limit\ (ppb(v/v))[unrounded]\ *\ (Molecular\ Weight/24.45)$

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

TO-14 _rev5MDL_DOD.rpt version 5.004 09/13/2011

Client Sample ID: DUPLICATE (BLIND)

GC/MS Volatiles

Lot-Sample # H2I240411 - 002		Work Order#	MWN141AA	Matr	ix AIR	
Date Sampled: 09/21/2012 Prep Date: 09/24/2012 Prep Batch #: 2268124 Dilution Factor.; 1		Date Received: Analysis Time: Analysis Time: Method	09/24/2012 09/24/2012 22:29 TO-15		•	
PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
Frichloroethene	0.11	0.040	0.014	0.59	0.21	0.075
1,1,1-Trichloroethane	0.020 J	0.080	0.012	0.11 J	0.44	0.065
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
cis-1,2-Dichloroethene	ND	0.080	0,024	ND	0.32	0.095
<u> </u>	0.025 J	0.080	0.016	` 0.17 J	0.54	0.11
1,1-Dichloroethene	ND	0.080	0.013	ND	0,32	0.052
irans-1,2-Dichloroethene	ND	0.080	0.020	ND	0.32	0.079
SURROGATE		PERCENT RECOVERY		CON	ORATORY TROL TS (%)	
4-Bromofluorobenzene	····	108		60 -	140	

Oualifiers

J Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

 $Reporting\ Limit\ (ug/m3) = Reporting\ Limit\ (ppb(v/v))[unrounded]\ *\ (Molecular\ Weight/24.45)$

 $MDL\ (ug/m3) = MDL\ (ppb(v/v))[unrounded]\ *\ (Molecular\ Weight/24.45)$

TO-14 _rev5MDL_DOD.rpt version 5.004 09/13/2011

TestAmerica Cedar Falls

Client Sample ID: INTRA-LAB BLANK

GC/MS Volatiles

Lot-Sample # HZ	2I240000 - 124B		Work Order#	MWN6N1AA	Mat	trix: AIR	
Prep Date: Prep Batch #: Dilution Factor.:	09/21/2012 09/24/2012 2268124 1		Date Received: Analysis Time: Analysis Time: Method	09/24/2012 09/24/2012 12:44 TO-15			
PARAMETER		RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
1,1-Dichloroethene		ND	0.080	0.013	ND	0.32	0.052
trans-1,2-Dichloroethene	•	ND	0.080	0.020	ND	0.32	0.079
cis-1,2-Dichloroethene		ND	0.080	0.024	» ND	0.32	0.095
Tetrachloroethene		ND	0.080	0.016	· ND	0.54	0.11
1,1,2-Trichloroethane		ND	0.080	0.021	ND	0.44	0.11
Vinyl chloride		ND	0.080	0.029	ND	0.20	0.074
1,1-Dichloroethane		ND	0.080	0.010	ND	0.32	0.040
1,1,1-Trichloroethane		ND	0.080	0.012	ND	0.44	0.065
Trichloroethene		ND	0.040	0.014	ND	0.21	0.075
SURROGATE			PERCENT RECOVERY		CO	BORATORY INTROL MITS (%)	_
4-Bromofluorobenzene			103		60	- 140	_

 $Result \ (ug/m3) = Result \ (ppb(v/v))[unrounded] \ * \ (Molecular \ Weight/24.45)$

 $Reporting\ Limit\ (ug/m3) = Reporting\ Limit\ (ppb(v/v))[unrounded]\ \star\ (Molecular\ Weight/24.45)$

 $MDL\;(ug/m3) = MDL\;(ppb(v/v))[unrounded]\; *\;(Molecular\;Weight/24.45)$

Client Sample ID: CHECK SAMPLE

GC/MS Volatiles

Lot-Sample #	I2I240000 - 124C		Work Order #	MWN6N1AC		Matrix:	AIR
Prep Date: Prep Batch #: Dilution Factor.:	09/21/2012 09/24/2012 2268124		Date Received: Analysis Time: Analysis Time: Method:	09/24/2012 09/24/2012 10:48 TO-15			
PARAMETER		SPIKE AMOUNT (ppb(v/v))	MEASURED AMOUNT (ppb(v/v))	SPIKE AMOUNT (ug/m3)	MEASURED AMOUNT (ug/m3)	PERCENT RECOVERY	RECOVERY LIMITS
Trichloroethene		5,00	3.76	26.9	20.2	75	70 - 130
1,1,1-Trichloroethane		5.00	5.05	27.3	27.6	101	70 - 130
1,1-Dichloroethane		5.00	4.61	20.2	18.7	92	70 - 130
Vinyl chloride		5.00	4.85	12.8	12.4	97	70 - 130
1,1,2-Trichloroethane		5.00	3.61	27.3	19.7	72	70 - 130
Tetrachloroethene		5.00	3.75	33.9	25.4	75	70 - 130
cis-1,2-Dichloroethene		5.00	4.35	19.8	17.3	87	70 - 130
trans-1,2-Dichloroether		5.00	4,30	19.8	17.0	86	70 - 130
1,1-Dichloroethene	·	5.00	4.41	19.8	17.5	88	70 - 130
SURROGATE			PERCENT RECOVERY			LABORATORY CONTROL LIMITS (%)	
4-Bromofluorobenzene	· · · · · · · · · · · · · · · · · · ·	-	109			60 - 140	

 $Result \ (ug/m3) = Result \ (ppb(v/v))[unrounded] \ * \ (Molecular \ Weight/24.45)$

 $Reporting\ Limit\ (ug/m3) = Reporting\ Limit\ (ppb(v/v))[unrounded]\ *\ (Molecular\ Weight/24.45)$

 $MDL\ (ug/m3) = MDL\ (ppb(v/v))[unrounded]\ *\ (Molecular\ Weight/24.45)$

TO-14 _rev5MDL_DOD.rpt version 5.004 09/13/2011.

Test America Knoxville GC/MS Volatiles

Lot ID:

H2I240411

Batch #: 10039

Matrix:

Air

Can #: 1118

MethCod: 7M

EPA-2 TO-15 Method:

		Reporting	
Parameter	Result	Limit	Units
cis-1,2-Dichloroethene	ND	0.080	ppb (v/v)
trans-1,2-Dichloroethene	ND	0.080	ppb (v/v)
Tetrachloroethene	ND	0.080	ppb (v/v)
Trichloroethene	ND	0.040	ppb (v/v)
Vinyl chloride	ND	0.080	ppb (v/v)
1,1-Dichloroethane	ND	0.080	ppb (v/v)
1,1-Dichloroethene	ND	0.080	ppb (v/v)
1,1,1-Trichloroethane	ND	0.080	ppb (v/v)
1,1,2-Trichloroethane	ND	0.080	ppb (v/v)

Test America Knoxville GC/MS Volatiles

Lot ID:

H2I240411

Batch #: 10040

Matrix: MethCod:

Air 7M Can #: 6515

Method:

EPA-2 TO-15

		Reporting	
Parameter	Result	Limit	Units
cis-1,2-Dichloroethene	ND	0.080	ppb (v/v)
trans-1,2-Dichloroethene	ND	0.080	ppb (v/v)
Tetrachloroethene	ND	0.080	ppb (v/v)
Trichloroethene	NĎ	0.040	ppb (v/v)
Vinyl chloride	ND	0.080	ppb (v/v)
1,1-Dichloroethane	ND	0.080	ppb (v/v)
1,1-Dichloroethene	ND	0.080	ppb (v/v)
1,1,1-Trichloroethane	ND	0.080	ppb (v/v)
1,1,2-Trichloroethane	ND	. 0.080	ppb (v/v)

US EPA ARCHIVE DOCUMENT

TAL Knoxville

phone 865-291-3000 fax 865-584-4315 5815 Middlebrook Pike Knoxville, TN 37921

ਿਸਟੀ ਨਿਸ਼ੀ (Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

D E TO

THE LEADER IN ENVIRONMENTAL TESTING

	Project Manager: Mike Had Phone: 402-330-2202	Tike H	Hike Hagemeister	ster	Sampled By: Rob Bergman	Rob 8.	ng -	Jan -			of	SOOCS	Cs			
Address: 10/21/2012 (Pancellar US, Ste. 106 City/State/Zip Cellar Falls, TA SO(0/3 Phone: 319-27-4016	Site Contact: TAL Contact:							- 1111			(noita					(noila
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Sample Identification TローRーフュー3	9-20-12 1003	1036	(Start)	(Stop)	5 7 5 7 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1	Canister ID	-11:			Α	1980 A 1850 A 1850 A 1850 A 1850 A 1850 A 1850 A 1850 A 1850 A 1850 A 1850 A 1850 A 1850 A 1850 A 1850 A 1850 A	Der Care	IA	s	27	10
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Special Instructions/OC Requirements & Comments:																
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Canisters Shipped by: Drongell e Test/America	Date/Time: 9/21/12	1255	011	anisters R	Canisters Received by:	9.21.12	12:	1.33								1
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TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST **US EPA ARCHIVE DOCUMENT**

1. Do sample container labels match COC? (IDs, Dates, Times) 2. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10 °C) 3. Were samples received with correct chemical preservative (excluding Encore)? 4. Were custody seals present/intact on cooler and/or containers? 5. Were all of the samples listed on the COC received? 6. Were all of the sample containers received intact?	□ 1a Do not match COC □ 1b Incomplete information □ 1c Marking smeared □ 1d Label torn □ 1e No label □ 1g Other: □ 2a Temp Blank = □ 2b Cooler Temp = □ 2c Cooling initiated for recently collected samples, ice present. □ 3a Sample preservative = □ 4a Not present □ 4b Not intact □ 5a Samples received-not on COC	
	1 to Do not match. 1 to Marking smeared 1 to Label tom 1 to No label 1 to Con to received 1 to Ocher: 2 a Temp Blank = 2 to Cooling initiated for recently 2 to Cooling initiated 2 to Cooling initia	
	10 Marking smeared 1 L Marking smeared 1 Label tom ceived 1 Label tom received 1 Label tom Blank = 2 Label tom Blank = 2 Label tom Label tom Label tom Label tom Label tom Label tom Label tom Label tom Label tom Label tom Label tom Label tom Label Label tom Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Label Lab	
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	16 No label 15 OC not received 16 OC not received 12 Other: 2a Temp Blank = 2b Cooling initiated for recently collected samples, ice present. 3a Sample preservative = 4b Not present 4b Not intact 5a Samples received-not on COC 5a Samples rece	
	1f COC not received 1g Other: 2a Temp Blank = 2b Cooler Temp = 2c Cooling initiated for recently collected samples, ice present. 3a Sample preservative = 4a Not present 4b Not intact 4c Other: 5a Samples received-not on COC 5a Samples receive	
	☐ 1g Other: ☐ 2a Temp Blank = ☐ 2b Cooler Temp = ☐ 2c Cooling initiated for recently collected samples, ice present. ☐ 3a Sample preservative = ☐ 4a Not present ☐ 4b Not intact ☐ 4c Other: ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Samples received-not on COC ☐ 5a Sam	
	2a Temp Blank = 2b Cooler Temp = 2c Cooling initiated for recently collected samples, ice present. 3a Sample preservative = 4a Not present 4b Not intact 4c Other: 5a Samples received-not on COC 5a Samples received	
	2b Cooler Temp = 2c Cooling initiated for recently collected samples, ice present. 3a Sample preservative = 4a Not present 4b Not intact 4c Other: 5a Samples received-not on COC 5a S	
Were samples received with correct chemical preservative (excluding Encore)? Were custody seals present/intact on cooler and/or containers? Were all of the samples listed on the COC received?	□ 2c Cooling initiated for recently collected samples, ice present. □ 3a Sample preservative = □ 4a Not present □ 4b Not intact □ 4c Other: □ 5a Samples received-not on COC	
	3a Samples, 1ce present. 3a Sample preservative = 4a Not present 4b Not intact 4c Other: 5a Samples received-not on COC	
Were all of the sample containers received intact?	4a Not present 4b Not intact 4c Other: 5a Samples received-not on COC 5	
Were custody seals present/intact on cooler and/or containers? Were all of the samples listed on the COC received? Were all of the sample containers received intact?	4a Not present 4b Not intact 4c Other: 5a Samples received-not on COC 5a Samples received	
Were all of the samples listed on the COC received? Were all of the sample containers received intact?	4b Not intact 4c Other: 5a Samples received-not on COC 2	
Were all of the samples listed on the COC received? Were all of the sample containers received intact?	5a Samples received-not on COC	
Were all of the sample containers received intact?	☐ 34 Samples received—not on COC	
Were all of the sample containers received intact?	Description Samples not received-on COC	
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	on Broken	
Were VOA samples received without headspace?	7a Headspace (VOA only)	The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s
Were samples received in appropriate containers?	□ 8a Improper container	response to the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second
Did von check for residual chlorine if necessary?	0 00 Could not be determined due	
in Jon Circuit Visit Circuit C	to matrix interference	
10. Were samples received within holding time?	☐ 10a Holding time expired	
1	☐ Incomplete information	
	If no, was pH adjusted to pH 7 - 9 with sulfuric acid?	
13 Are the shinning containers intact?	□ 13a Leakino	
	13b Other:	
14. Was COC relinquished? (Signed/Dated/Timed)	□ 14a Not relinquished	
15. Are tests/parameters listed for each sample?	☐ 15a Incomplete information	manuscum matem (A) (A) (A) (A) (A) (A) (A)
16. Is the matrix of the samples noted?	☐ 15a Incomplete information	
17. Is the date/time of sample collection noted?	☐ 15a Incomplete information	
18. Is the client and project name/# identified?	☐ 15a Incomplete information	
	□ 19a Other	
Ouote #: 87304 PM Instructions: NA		
		•
Sample Receiving Associate:	Date: 9-24-12	QA026R23.doc, 022812

US EPA ARCHIVE DOCUMENT Test America - Knoxville ---- Air Canister Dilution Log Lot Number: <u>H2I240411</u>

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	Initial Can Pressure	Sample ID	MWN13	MWN14
		Tedlar Bag Pbarr Analyst/Date Time (in)	9-24-12 NA 29108	_

1118 129/24/12

EPA ARCHIVE DOCUMENT

phone 865-291-3000 fax 865-584-4315 5815 Middlebrook Pike Knoxville, TN 37921

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

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Ofher (Please specify in notes section) Landfill Gas. Soil Gas iA InsidmA SOCS 9889 TiA Toobni Sample Type ĕ Other (Please specify in notes section) SHIPPING: SPECIAL: HANDLING: TOTAL: 9761-Q MTSA EPA 25C 0.00 12:25 DE A93 mehagemeister@terracen.com Rob Bergman A41-OT Date: 21Sep12 Wgt: 16.85 LBS SyGS: STANDARD OVERNIGHT TRCK: 4208 2710 3161 31-O1 Canister ID 5150) <u>8</u>= Sampled By: Flow Controller K303A K470 Canisters Received Received by: Received by: Vacuum in Field, 'Hg Temperature (Fahrenheit) Pressure (inches of Hg) 14,0 -3.0 Canister (Stop) Hagemeister Ref: Dep: Canister Vacuum in Field, "Hg (Start) -30.0 29.0 Analysis Turnaround Time Ambient Ambient and Phone: 4のター330- スタロゴ 1036 1637 Time Start | Time Stop 1255 Standard (Specify) Rush (Specify) email results to accleange terracen.com 6001 6001 Interior Date/Time: 9/21/12 Interior Project Manager: Date/Time: 9/2 | 11Site Contact: TAL Contact: Date/Time: 21-12-6 Sample Date(s) Start Start Stop Stop Special Instructions/QC Requirements & Comments: Ste. 102 50613 Bergman Canisters Shipped by: Drappest e Test/America Address: 610 12 Chancellar Dr. City/State/Zip Cellar Falls, IA
Phone: 319-277-4010 Sample Identification Rob Begins Project Name: Chamberlain (Blind) Site/location: Waser 100 Company: Terracon Client Contact Information PO# 07/07020 IA-B-73 Duglicak Relinquished by: amples Relind Sampled by:

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